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FM 7-21

DEPARTMENT OF THE ARMY FIELD MANUAL

**HEADQUARTERS AND
HEADQUARTERS COMPANY
INFANTRY DIVISION**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY
AUGUST 1957**

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 MANUAL }
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HEADQUARTERS AND HEADQUARTERS COMPANY INFANTRY DIVISION BATTLE GROUP

PART ONE.

OPERATIONS

	Paragraphs	Page
CHAPTER 1. GENERAL		
Section I. Mission and organization -----	1-3	3
II. Company headquarters -----	4, 5	5
III. Battle group headquarters section.	6-13	7
CHAPTER 2. COMMUNICATION		
Section I. General -----	14-37	11
II. Command posts -----	38-45	52
III. Tactical employment -----	46-54	62
CHAPTER 3. RECONNAISSANCE PLATOON		
Section I. General -----	55-60	79
II. Fundamentals and techniques of reconnaissance and security.	61-64	85
III. Tactics of the reconnaissance platoon.	65-69	113
IV. Battle group tactics as applied to the reconnaissance platoon.	70-76	126
CHAPTER 4. COUNTERFIRE SQUAD		
Section I. General -----	77-86	131

	Paragraphs	Page
Section II. Technique.....	87-95	143
III. Tactical employment.....	96-118	172
CHAPTER 5. ASSAULT GUN PLATOON		
Section I. General.....	119-123	184
II. Offense.....	124-137	191
III. Defense and retrograde.....	138-143	202
CHAPTER 6. ENGINEER PLATOON		
Section I. General.....	144-149	206
II. Offense.....	150	213
III. Defense and retrograde.....	151, 152	215
PART TWO		
LOGISTICS AND PERSONNEL		
CHAPTER 1. SUPPLY AND MAINTENANCE PLATOON		
Section I. Mission, organization, duties, and installations.	153-160	216
II. Combat supply operations....	161-167	222
III. Maintenance.....	168-175	246
IV. Repair, salvage, and miscellaneous activities.	176-181	252
CHAPTER 2. MEDICAL SERVICE		
Section I. The battle group surgeon.....	182	256
II. Medical platoon.....	183	257
III. Employment and evacuation...	184-186	259
CHAPTER 3. PERSONNEL SECTION	187, 188	263
APPENDIX REFERENCES.....		264
INDEX.....		266

PART ONE

OPERATIONS

CHAPTER 1

GENERAL

Section I. MISSION AND ORGANIZATION

1. Purpose and Scope

a. This manual is a guide to the training and tactical employment of the headquarters and headquarters company of the battle group. It covers the organization and functioning of the company and its elements.

b. The material presented herein is applicable to atomic warfare. Where applicable, appropriate modifying guidance for nonatomic warfare is integrated throughout the manual.

2. Mission

The headquarters and headquarters company provides command, staff, supply, administration, maintenance, communication, reconnaissance, engineer, and assault gun support for the battle group. This company provides local security for the battle group command post, and also provides counterfire data and medical services for the battle group.

3. Organization

The company (TOE 7-12D) consists of a battle group headquarters, a battle group headquarters section, a communication platoon, a personnel sec-

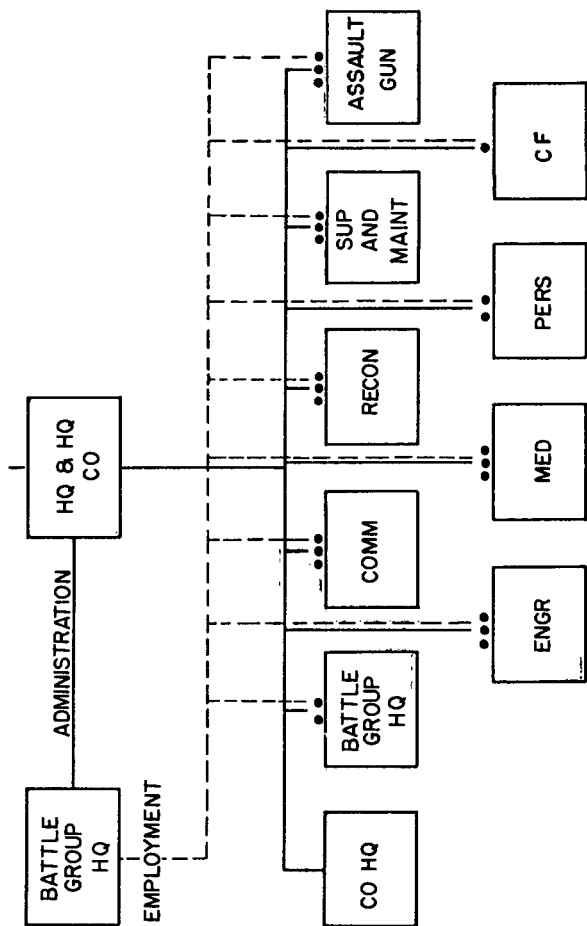


Figure 1. Headquarters and headquarters company, battle group.

tion, a supply and maintenance platoon, a counter-fire squad, a reconnaissance platoon, an assault gun platoon, an engineer platoon, and a medical platoon (fig. 1).

Section II. COMPANY HEADQUARTERS

4. General

The company headquarters provides necessary control and services for all men and units assigned or attached to the company. It consists of a company commander, an executive officer, a first sergeant, mess personnel, a supply sergeant, an armorer, a company clerk, and a light truck driver.

5. Duties of Company Headquarters Personnel

a. The *company commander* is also the battle group headquarters commandant. He gives positive leadership to his command and maintains its discipline, welfare, and combat proficiency.

- (1) To accomplish this mission, he uses all means at his command and requests additional means whenever necessary. Without awaiting orders, he coordinates with other units and agencies.
- (2) In the battle area, he uses observation, patrols, combat outposts, roadblocks, interior guards, liaison, and personnel reconnaissance to maintain the security of the battle group command post and to prepare for future operations. He assigns definite missions to his subordinate

leaders and keeps informed of their actions in order to give assistance when needed and to insure the success of his plan. He goes where he can best control and coordinate his company's actions.

- (3) The company commander is responsible for administration, discipline, supply, maintenance and individual training for all personnel assigned or attached to the company. Supervision of employment and technical and tactical training of all components of headquarters and headquarters company except company headquarters personnel, rests with the battle group commander and his staff officers having primary staff responsibility for this type activity.

- (4) For his duties as headquarters commandant, see FM 7-40.

b. The *executive officer* is second in command of the company. His duties include:

- (1) Acting as assistant headquarters commandant.
- (2) Assuming command during the company commander's absence.
- (3) Assisting the company commander by helping to supervise training, administration, mess, supply, and maintenance within the company.
- (4) Serving as battle group CBR officer.

c. The *first sergeant* assists the company commander in the performance of his duties. He advises him on such matters as appointments, assignments, and disciplinary matters as they pertain to the enlisted members of the company.

d. The *company mess personnel* consists of the mess steward, cooks, and cook's helper. They operate the battle group headquarters and headquarters company kitchen. The kitchen is operated as prescribed in TM 10-402.

e. The *supply sergeant* receives, stores, maintains, and turns in supplies and equipment for the company. He prepares and maintains organizational and individual supply records. He supervises the company armorer.

f. The *armorer*, operating under the supervision of the supply sergeant, services and makes repairs on small arms of the company. He performs duties to keep small arms in serviceable condition. He drives and maintains the $\frac{3}{4}$ -ton truck assigned to the company headquarters.

g. The *company clerk*, supervised by the first sergeant, performs necessary administrative actions required within the company.

h. The *light truck driver* drives and maintains the $\frac{1}{4}$ -ton truck assigned to the company headquarters.

Section III. BATTLE GROUP HEADQUARTERS SECTION

6. General

a. The battle group headquarters section con-

sists of five officers (the assistant S2, the assistant S3, the assistant S3 Air, and two liaison officers) and the enlisted men who work at battle group headquarters. They assist the staff officers of the battle group in performing their duties. The enlisted men are the intelligence and operations sergeants and their assistants, the counterfire operations sergeant, the chaplain's assistants, the information specialist, and the clerks, drivers, and radiotelephone operators required at battle group headquarters.

b. For duties of the officer personnel of battle group headquarters, see FM 7-40.

7. Intelligence Sergeant and Assistant

The intelligence sergeant assists the S2 in collecting intelligence information, posting the situation map, maintaining records, and disseminating information and intelligence. He prepares overlays and intelligence reports and maintains a count of enemy casualties, prisoners of war, and equipment. The assistant intelligence sergeant assists the intelligence sergeant as directed.

8. Operations Sergeant and Assistant

The operations sergeant and his assistant assist the operations and training officer in performing his duties. They post friendly information on the situation map and assist in the preparation, reproduction, and distribution of orders, sketches, overlays, training schedules, and reports.

9. Counterfire Operations Sergeant

The counterfire operations sergeant has the

primary function of locating enemy close support weapons and reporting this information promptly for use by the appropriate agency. The counterfire operations sergeant is an assistant to the S2 and normally works in the mortar battery fire direction center. He furnishes counterfire target data directly to the fire direction officer and obtains from the mortar battery intelligence all available information which he transmits to the S2. He coordinates with the counterfire squad to obtain, without delay, all counterfire information it produces, and processes all shelling reports forwarded by other elements of the battle group. He maintains the counterfire information form (fig. 23) and the counterfire chart.

10. Information Specialist

The information specialist, under the staff supervision of the executive officer, prepares, collects, and disseminates information for military and civilian consumption through news media. He reviews and edits releases for propriety and good taste, and insures conformity to army information policies.

11. Clerical Assistants

The clerk-typists provide clerical assistance to the battle group commander and his staff. The chaplain's assistants perform the duties required to assist the chaplain in his functions. The chaplain's assistants also drive the 1/4-ton vehicles assigned for the chaplain's use. The mail delivery

clerk delivers incoming mail and collects and processes outgoing mail.

12. Light Truck Driver

The light truck driver operates the 2½-ton shop van used as a mobile operation section and to transport operations personnel and equipment.

13. Radiotelephone Operators

The radiotelephone operators operate the radios used by the battle group commander and his staff.

CHAPTER 2

COMMUNICATION

Section I. GENERAL

14. Responsibility for Communication

a. The battle group commander is responsible for the installation, operation, and maintenance of all communication facilities of the battle group, and for battle group communications functioning as part of the division signal system. All subordinate commanders of the battle group are responsible for, and exercise tactical and technical control over the communication systems within their commands. Tactical control of the systems insures that the communication systems are established and maintained properly to meet the operational requirements of the tactical situation. Technical control includes the supervision of the methods of installation, operation, maintenance, and supply of the signal equipment employed. A properly established communication system provides the commander with parallel means of communication for efficient command, control, and administration of his unit. The system provides the commander with the capability to control the actions of his units, to coordinate his supporting fires, to receive and transmit orders and information, to maintain contact with higher, lower, and

adjacent units, and to coordinate logistics and personnel matters. The communication platoon of the battle group is under the operational control of the battle group communications officer.

b. Establishing and maintaining communication between units is governed by the following rules:

- (1) The higher unit is responsible for establishing and maintaining communication with the subordinate (including attached) units.
- (2) A unit supporting another unit by fire is responsible for establishing and maintaining communication with the supported unit. A unit supporting another unit other than by fire contacts the supported unit and coordinates communication responsibility.
- (3) Lateral communications (except radio) between battle groups is established by the battle group area support platoons of the division signal battalion. Lateral radio communication among battle groups within a division is undertaken, without prior arrangement, on the Division Command/OP Net (RRT) and Division Intelligence/OP Net (RTT). The rule for establishing lateral communication from left to right is applicable for the subordinate units of the battle group.

15. Communication Support for the Battle Group

a. The establishment of a division area communication system by the division signal battalion provides for the installation of forward signal centers with or near the major divisional elements. These forward signal centers are operated by battle group area support platoons from the combat operation company of the division signal battalion. The forward signal center provides the connecting link between the battle group headquarters and the division area communication system.

b. Each forward signal center is organized and equipped to provide the following communication services to the battle group in its area of responsibility:

- (1) Message center (not including messenger), cryptographic, and teletypewriter service on a 24-hour basis as a supplement to the organic capabilities of the battle group.
- (2) Installation and maintenance of the incoming wire lines from the signal center to the battle group headquarters and to other divisional units in that area of signal responsibility.
- (3) Radio relay and carrier cable circuits between signal centers in the division area.
- (4) Mobile signal repair shops providing limited or emergency field signal maintenance within the battle group area,

normally by effecting direct exchange of defective components or subassemblies on an "on-call" basis.

- (5) Establishment and operation of a forward switch during displacement.
- (6) A radio/wire integration station for connecting FM radio users in the battle group area into the division area communication system and for other services as described in paragraph 28.

c. The division signal battalion furnishes a scheduled and special division messenger service down to and connecting battle groups and other major subordinate units.

d. Air messenger service is incorporated into the division communication system as a complement to the ground messenger service. Air message service is the responsibility of the division aviation company.

16. Mission and Organization of Communication Platoon

a. The battle group communication platoon performs the functions of installation, operation and maintenance of all communication facilities within the battle group headquarters. In addition, it establishes and maintains communication to, but not within, subordinate companies and attached units. It provides continuous communication for the battle group headquarters by all means of communication.

b. The communication platoon is organized into a platoon headquarters and three sections. The

sections can be subdivided further into teams of varying personnel strength, depending upon each team's mission, the priority of the operation, and the type of terrain over which the unit is operating.

- (1) The *platoon headquarters* consists of the communication chief, two senior radio mechanics, and two radio mechanics, both of the latter also being light truck drivers.
- (2) The *message center section* consists of the chief message clerk, message clerks, manual teletypewriter operators, a messenger, and two motor messengers.
- (3) The *wire section* is composed of a wire foreman, three wire team chiefs, switchboard operators, and wiremen.
- (4) The *radio and visual section* is composed of a chief radio operator, radioteletype team chiefs, radioteletype operators, intermediate speed radio operators, and radiotelephone operators.

17. Duties of Communication Platoon Headquarters Personnel

a. The *communication chief* commands the communication platoon and assists the battle group communications officer. His duties include—

- (1) Training and controlling his platoon.

- (2) Supervising the installation, operation, and maintenance of the signal equipment issued to the platoon.
- (3) Supervising the operation of communication installations.
- (4) Assisting the battle group communications officer and representing him in his absence.
- (5) Insuring that the battle group communications officer's instructions are carried out by the sections of the communication platoon.
- (6) Coordinating the work between the sections of the platoon.
- (7) Supervising the selection of locations for communication installations, when necessary.
- (8) Supervising ground-to-air communication.
- (9) Seeing that records are kept properly.
- (10) Insuring that vehicles are maintained and dispatched correctly.
- (11) Supervising the activities of the assigned radio mechanics.
- (12) Keeping the battle group signal officer informed as to status of maintenance of signal equipment.

b. The *senior radio mechanics'* duties include—

- (1) Inspecting, testing, and repairing radio sets, and other signal equipment organic to the battle group.

- (2) Maintaining records of maintenance and of modifications performed on each item of signal equipment in the battle group.
- (3) Maintaining the authorized level of running repair for signal maintenance and keeping the communication chief informed of the status of signal maintenance and the supply of authorized spare parts.
- (4) Coordinating with the chief radio operator for the prompt repair of any radio or radioteletype equipment requiring repair beyond the capabilities of local maintenance. In such cases, this repair work may be completed by the mobile signal repair shop at the supporting signal center.
- (5) Supervising the other radio mechanics.

c. The *radio mechanics'* duties include those duties listed in b(1) through (3), above. In addition, they will perform the duties of light truck drivers for the vehicles of the communication platoon headquarters.

18. Duties of Message Center Section Personnel

a. The *chief message clerk* is responsible to the communication chief for the discipline, training, and operation of his section. His duties include—

- (1) Selecting the exact location for the message center and messenger station and establishing the message center facilities.

- (2) Processing, filing, servicing, and selecting the method of transmission for outgoing messages.
 - (3) Supervising the operation and maintenance of message center equipment.
 - (4) Checking the flow of message traffic and reporting to the originator when a message cannot be delivered within the prescribed time.
 - (5) Supervising cryptography procedures of message clerks and manual teletype-writer operators.
 - (6) Maintaining a status log on the effectiveness of each means of communication.
 - (7) Signing for messages delivered by scheduled or special messengers.
 - (8) Keeping the official time.
 - (9) Supervising messenger communication.
 - (10) Posting message center signs or guides.
 - (11) Maintaining a record of the locations of command posts of units with which the battle group maintains communication, including the best routes to them.
 - (12) Maintaining a supply of message center forms.
 - (13) Scheduling of message center personnel to provide operations on a 24-hour basis.
- b. The *message clerks'* duties include—
- (1) Assisting the chief message clerk in his duties.

- (2) Supervising one of the message center teams during displacement of the command post.
- (3) Encrypting and decrypting of messages as required.
- (4) Receiving, recording, and dispatching incoming and outgoing messages and documents.
- (5) Maintaining a code file of processed messages.
- (6) Processing encrypted messages, to include insertion of call signs when messages are to be transmitted by electrical means.

c. The *manual teletypewriter operator's* duties include—

- (1) Transmitting and receiving messages on teletypewriter equipment in message center.
- (2) Correcting message errors and obtaining receipt for completed transmissions.
- (3) Receiving and processing incoming teletypewriter transmissions.
- (4) Encrypting and decrypting messages, employing message center cipher machine.
- (5) Establishing and posting of station log.
- (6) Maintaining teletypewriter equipment by cleaning and making minor adjustments in the equipment and replacing minor parts of teletypewriter equipment, as authorized.
- (7) Keeping the chief message clerk informed of the status of teletype communication.

- (8) Informing the chief message clerk and communication chief on the status of parts supply for teletypewriter equipment.
- (9) Performing other communication duties as directed; in particular, serving as relief radioteletypewriter operator when landline circuits are not available or in emergencies.

d. Messengers' duties include—

- (1) Carrying oral or written messages during all conditions of light, terrain, weather, and enemy activity.
- (2) Driving and performing required driver maintenance on the messenger vehicles.
- (3) Performing other communication duties as directed.

19. Duties of Wire Section Personnel

a. The wire foreman is responsible to the communication chief for the discipline, training, and operation of the wire section. His duties include—

- (1) Selecting the exact locations for wire installations.
- (2) Supervising the wire team chiefs in the installation, operation, and maintenance of the wire system within the command post and to all subordinate or attached units.
- (3) Selecting general routes for wire lines.
- (4) Preparing and recording line route maps, circuit diagrams, and traffic diagrams.

- (5) Insuring that the wire section personnel perform their duties correctly and efficiently.
- (6) Keeping the chief message clerk and the communication chief informed on the status of wire communication.
- (7) Maintaining a sufficient supply of wire and other necessary supplies on hand to permit continuous wire operations.
- (8) Keeping records such as status of wire supply and the maintenance forms on wire equipment.
- (9) Supervising the maintenance of the vehicles in the section.
- (10) Allocating wiremen to the wire teams based on the current mission of each team.

b. The *wire team chiefs'* duties include—

- (1) Assisting the wire foreman.
- (2) Supervising the wiremen, as organized into teams, in the correct techniques of laying and maintaining the wire lines.
- (3) Selecting wire routes and assisting in the preparation of line route maps and circuit diagrams.
- (4) Assuring that wire lines are policed so as to minimize their damage by traffic and enemy fire.
- (5) Informing the wire foreman of the status of wire supply and the serviceability of wire circuits.

c. *Wiremen's* duties include—

- (1) Installing, testing, and maintaining wire circuits and telephones.
- (2) Tagging, testing, and splicing field wire lines.
- (3) Locating and correcting trouble in wire lines.
- (4) Operating switchboards.
- (5) Keeping the wire team chief informed of the status of wire communication and wire supply.
- (6) Driving and performing proper driver maintenance of wire section vehicles.
- (7) Performing other communication duties as directed.

d. The *switchboard operators'* duties include—

- (1) Installing, operating, and maintaining switchboards.
- (2) Preparing and maintaining traffic diagrams.
- (3) Routing traffic and rerouting calls when normal circuits fail.
- (4) Supervising traffic to insure satisfactory service to the user.
- (5) Performing such other communication duties as directed.

20. Duties of the Radio and Visual Section Personnel

a. The *chief radio operator* is responsible to the communication chief for the discipline, training, and operation of his section. His duties include—

- (1) Selecting the exact locations for the radio, radioteletype, and visual installations, insuring adequate dispersion of radio vehicles.
- (2) Supervising the installation, operation, and maintenance of radio and radioteletype equipment.
- (3) Insuring that visual signaling equipment is prepared for use and that sufficient personnel are fully trained in visual signaling procedures.
- (4) Preparing operating schedules for radio and radioteletype operators.
- (5) Supervising the maintenance of communication security, to include the use of authorized codes, ciphers, and authentication systems.
- (6) Insuring that all radio equipment is operated according to prescribed procedure and current communication orders.
- (7) Informing the chief message clerk and the communication chief of the status of radio and radioteletype communication.
- (8) Supervising the maintenance of station logs by operators of all radio nets.
- (9) Supervising the driver maintenance on the section's vehicles.
- (10) Informing the communication chief of the operating condition of all radio and radioteletype equipment and coordinating with the radio mechanics for repairs when needed.

- (11) Maintaining records of the section, such as station logs, work schedules, equipment maintenance schedules, etc.
 - (12) Supervising the training of radiotelephone operators within the battle group.
 - (13) Supervising first echelon maintenance of radios and other equipment issued to the section.
- b. The *radioteletype team chiefs'* duties include—
- (1) Supervising the installation, operation, and maintenance of radio and teletype equipment.
 - (2) Assisting the chief radio operator in establishing operators' work schedules to provide operations on a 24-hour basis.
 - (3) Performing duties of radioteletype operator as required.
 - (4) Supervising the operator maintenance of authorized teletype equipment.
 - (5) Informing the chief radio operator of the current status of radioteletype communication.
 - (6) Knowing joint radio and teletypewriter procedures.
 - (7) Coordinating with the radio mechanics for the repair of teletype equipment, when needed.
 - (8) Informing the chief radio operator of the status of parts supply.
- c. The *radioteletype operators'* duties include—
- (1) Setting up and operating manual and radioteletype equipment.

- (2) Transmitting messages, correcting message errors, and obtaining receipt for completed transmissions.
- (3) Receiving and processing incoming teletypewriter messages and preparing such messages in proper format for delivery.
- (4) Cleaning, making minor adjustments, and replacing minor parts of teletype equipment as authorized.
- (5) Establishing and posting station logs.
- (6) Driving and performing driver maintenance on assigned vehicles.
- (7) Performing other communication duties as directed, particularly during periods when radio stations are under radio silence or in standby status.

d. The intermediate speed radio operators' duties include—

- (1) Installing, operating, and maintaining radio equipment.
- (2) Transmitting and receiving messages by use of sending key or voice transmission.
- (3) Processing incoming messages.
- (4) Maintaining station logs.
- (5) Observing communication security regulations.
- (6) Transmitting and receiving visual signals.
- (7) Driving and performing driver maintenance on radio vehicle.

e. Radiotelephone operators operate the FM voice radio sets in the radio and visual section. They are

also trained in visual signaling techniques. In addition, one operator is the light truckdriver for one of the vehicles of the radio section.

21. Duties of the Battle Group Communications Officer

As a member of the commander's special staff, the *battle group communications officer's* duties include—

a. Advising the commander and staff on communication matters and the command post flag location.

b. Submitting recommendations relative to procurement and replacement of communication personnel.

c. Assisting in preparing training directives pertaining to communication, and supervising the technical training of all communication personnel and others designated by the commander.

d. Determining the requirements for signal equipment and supplies, and coordinating with the supply officer in their procurement and distribution. For repair parts, see *q* below.

e. Supervising the care, maintenance, and repair of signal equipment.

f. Obtaining current signal operation instructions (SOI) and standing signal instructions (SSI) from higher headquarters.

g. Preparing and distributing extracts of SOI and SSI.

h. Preparing, for the commander's approval, orders and codes, as authorized, and the battle group communication SOP

i. Making plans and recommendations for establishing a flexible and coordinated communication system within the battle group and between the battle group and other units.

j. Submitting recommendations for paragraph 5 of the battle group operation orders.

k. Assisting in selecting the exact location for the battle group command post, and selecting locations for communication installations within the command post

l. Supervising the installation, operation, and maintenance of communication facilities throughout the battle group.

m. Coordinating communication with higher, adjacent, supporting, and attached units.

n. Preparing plans for displacement or extension of the existing communication system

o. Supervising the maintenance of communication security, including the use of authorized codes, ciphers, and authentication systems.

p. Keeping the communication chief informed of the situation.

q. Coordinating with the platoon leader of the battle group area support platoon at the forward signal center relative to the—

(1) Proposed tactical communication plans of the battle group.

(2) Necessary communication plans to insure continuous operation of the battle group's communications in the division area communication system.

- (3) Limited field signal maintenance and supply of repair parts as required for signal equipment of the battle group, provided by the mobile repair team at the signal center.

r. Exercising operational control over any elements of the division signal battalion attached to the battle group for operations.

22. Staff Responsibilities Affecting Communication

a. The *adjutant's* (S1) responsibilities include—

- (1) Selecting the exact location for the battle group command post and deciding upon the interior arrangement of the command post (coordinates with the operations officer and the signal officer).
- (2) Selecting locations for the commander, the staff, and other command post installations exclusive of communication installations.
- (3) Directing the placing of signs or guides to indicate the location of the command post, in the absence of the headquarters commandant.
- (4) Supervising the overall movement of the command post.

b. The *intelligence officer's* (S2) responsibilities include—

- (1) Informing the signal officer of special security measures.
- (2) Arranging for communication with observation posts and other intelligence elements.

- (3) Supervising the collection of information of signal intelligence value.
- (4) Procuring maps and aerial photographs for communication units.

c. The *operations and training officer's* (S3) responsibilities include—

- (1) Coordinating communication for tactical operations with the battle group signal officer.
- (2) Giving timely information to the battle group signal officer relative to contemplated operations and movement of the command post.
- (3) Incorporating the battle group signal officer's recommendations for paragraph 5 in operation orders prepared for the commander's approval.
- (4) Coordinating with the battle group signal officer in the use of codes as authorized.

d. The *logistical officer's* (S4) responsibilities include—

- (1) Insuring that signal equipment and supplies are procured and distributed.
- (2) Insuring that salvage and captured signal equipment is evacuated.
- (3) Seeing that the communication vehicles have the necessary road priority.
- (4) Arranging for communication with supply installations.

e. As *headquarters commandant*, the headquarters company commander's responsibilities include—

- (1) Planning and organizing the security of the command post.
- (2) Supervising the movement of command post impedimenta.
- (3) Maintaining order and enforcing traffic and camouflage discipline in the command post area.
- (4) Placing signs or guides leading to the command post.

23. Signal Supply

a. Authorized items of signal equipment are prescribed in tables of organization and equipment. Additional equipment may be authorized by higher commanders. Initial supply and resupply is made through normal supply channels. Requests for replacement of signal equipment and supplies are submitted through normal supply channels. The battle group S4 consolidates these requests and requisitions the equipment and supplies. The battle group communications officer assists in preparing these requests and requisitions. Signal supplies are delivered to the battle group supply area. The supply and maintenance platoon leader makes the distribution to the units. Unserviceable signal equipment which cannot be repaired or replaced by the forward repair sections of the division signal battalion (par. 24) is replaced by direct exchange for serviceable items from the reserve stock at the division signal supply and maintenance point. In an emergency, the battle group communications officer may obtain signal supplies directly from a signal supply point.

b. Repair parts consist of any parts, assemblies, or components which are required for maintenance of an end item. Allowances for repair parts are established by documents such as signal supply manuals; or authorized organizational stockage lists. Authorized allowances of repair parts are carried by all echelons as a basic load. Signal mobile repair teams will normally issue and deliver repair parts for organizational maintenance. When it is not practicable to send repair parts to using units by mobile repair teams, units requisition them as needed. The requisition flows through maintenance channels as does the distribution of required repair parts.

24. Maintenance of Signal Equipment

Each unit maintains and repairs its signal equipment within the limits of its maintenance facilities, available parts, authorized tools and test equipment, and the capabilities of assigned repairmen. Maintenance performed by using personnel includes protecting the equipment from weather and rough usage, cleaning and drying it, tightening screws, lubricating, and making minor repairs and replacement of parts as authorized. When the equipment becomes inoperative, or an inspection reveals it may fail to operate because of excessive wear of some part or parts, it is turned in to the radio repairmen for repair. Unserviceable items that cannot be repaired by the battle group radio mechanics are repaired by the forward repair section of the area support platoon by replacing defective components or subassemblies. In the event the forward repair

section cannot repair defective signal equipment, it is evacuated to the division signal supply and maintenance section of division signal battalion for more extensive repair. Repaired items are returned to the units. Utility equipment within the battle group can be used as replacements for unserviceable items until they are repaired and returned.

25. Means of Communication

a. Signal communication includes all means of conveying information of any kind from one person or place to another except by personal conversation and mail. In this manual, the term *signal communication* is abbreviated to *communication* except where misunderstanding might result.

b. The means of communication available to the battle group are wire, radio, messenger, visual, and sound. The composition of the means in each unit is limited by the men, equipment, and transportation provided by the tables of organization and equipment and the unit or higher commander. The various means of communication have different capabilities and limitations. They are used so that they supplement each other, and entire dependence is not placed on any one means. The reliability of communication systems is greatly increased by the use of all practical means. The means used most in a given situation is the one that provides the maximum reliability, flexibility, secrecy, and speed with a minimum of effort and material.

26. Wire Communication

a. Wire is a principal means of communication

and includes the use of field wire, wirelaying and recovery equipment, battery-operated and sound-powered telephones, switchboards, teletype equipment, and associated equipment. Except for the transmission of messages such as maps and documents, wire is a highly effective means of communication. It affords person-to-person conversation with break-in operation (capability of interrupting the conversation). Wire is more secure than radio communication; however, security is never assured when transmitting in the clear. The decision to establish wire communication depends upon the need for it and the available time to install and use it. The supply of wire on hand, the expected resupply, and the future needs also are considered. Wire communication can be used in most terrain and situations. Tables of organization and equipment provide the units with the equipment to install and maintain their wire communication systems. Figure 2 shows a typical wire system installed by the battle group communication platoon.

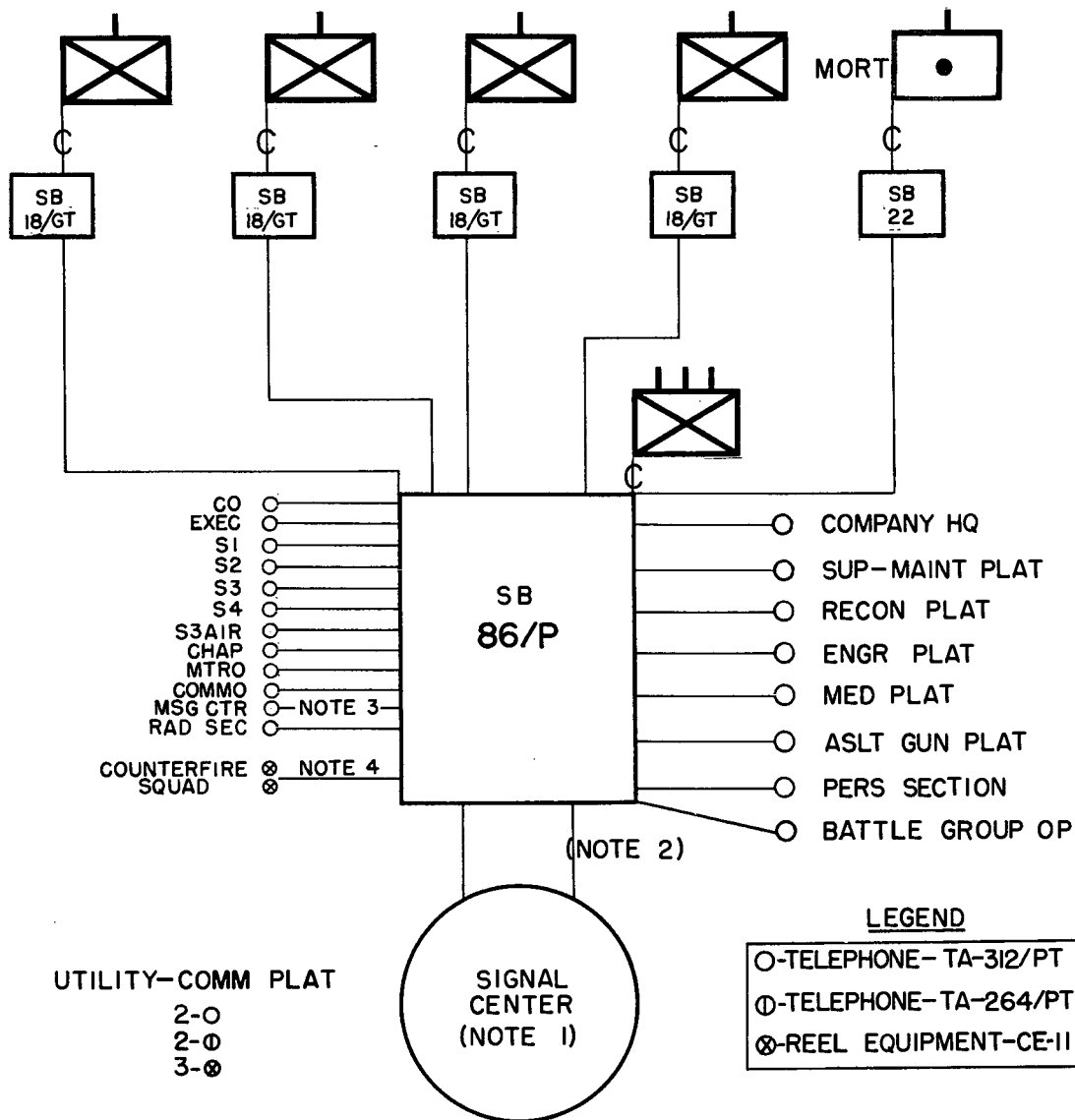
b. Using battery-operated telephones the maximum operating range of field wire circuits is approximately 22 miles. Using the sound-powered telephone TA-1/TT, the dependable range is from 4 to 8 miles. The range of wire communication varies, depending principally upon the weather and the condition of the wire. Wet weather, poor splices, and damaged insulation reduce the range appreciably. The wire operating range can be increased by using electrical repeaters or amplifying telephones. Cable is used to increase the telephone range and the available number of circuits, but it

is only issued to the division signal battalion and higher echelons.

c. It takes longer to install wire communication than any other means. The time for installation depends mainly upon the length of the line and the method of laying it (vehicle or manpack). Wire lines can be laid by men on foot at about $1\frac{1}{2}$ miles per hour and by vehicle at 3 to 5 miles per hour. In estimating the required time, it is also necessary to consider the number of available men, their training, the terrain, routes, weather, and visibility. Wire lines usually are laid by wire teams of three to five men. One man can lay a wire line by using a wire dispenser or light reel. Besides the normal methods of installation, wire can be laid from dispensers attached to light aircraft or cast a short distance over an obstacle (such as a stream) by attaching it to a rifle grenade or rocket fired from a launcher.

d. Wire lines are laid off roads with 15 to 20 percent slack. Wire is placed overhead in command posts or other areas where it is impracticable to bury it or to leave it lying on the ground. In crossing roads wire is buried, placed overhead, or run under bridges and culverts. Areas are avoided where wire is likely to be damaged by traffic or enemy fire. Part of a wire team lays the wire and the remainder of the team polices it (throws it off the road, makes road crossings, splices, etc.). The laying of a line is not delayed for policing it.

e. Switchboards are used to increase the flexibility of wire systems and to reduce the number of wire lines needed. Party lines may be used to ex-



- NOTES: 1. SIGNAL CENTER ESTABLISHED BY THE DIVISION SIGNAL BATTALION PROVIDES CRYPTOGRAPHIC SERVICE, RADIO RELAY, TELEPHONE AND TELETYPE SERVICE TO THE BATTLE GROUP.
2. NUMBER OF CIRCUITS INSTALLED FROM SIGNAL CENTER IS BASED ON AVAILABILITY AND REQUIREMENTS.
3. ADDITIONAL LINE FOR PAGE PRINTING TELETYPEWRITER IN BATTLE GROUP MESSAGE CENTER MAY BE LAID TO SWITCHBOARD.
4. COUNTERFIRE SQUAD TO TIE INTO BATTLE GROUP WIRE SYSTEM AT NEAREST SWITCHBOARD.

Figure 2. Type battle group wire system.

pand the subscriber capacity of the various switchboards in the battle group. Sound-powered telephones without ringing devices connected to switchboards require another sound-powered telephone at the switchboard to detect calls.

f. The number of telephone messages that can be transmitted simultaneously over a wire system is limited. Calls are kept brief, and the telephone is reserved for occasions when there is a need for discussion, speed, and relative secrecy. During critical periods, the use of the telephone may be restricted to designated personnel, except for emergency calls. Telephones are not used for long reports or orders when another means can be used effectively. To reduce the time the telephone is in use and to facilitate entry in the unit journal, messages are written or notes are prepared before a conversation begins.

g. When the volume of traffic warrants its use, teletypewriter service is established as required and as directed by higher headquarters. Teletypewriters provide both headquarters with a written record of messages exchanged. Teletype equipment in the battle group communication platoon increases substantially the volume of messages which can be handled by the battle group.

27. Radio Communication

a. Radio is a principal means of communication within the battle group. Radios are provided for all commanders including platoon leaders. Additional radios are provided for command posts, fire control, and other uses. All radio sets issued within

3 and 4 show typical radio nets in which the battle group communication platoon operates.

b. Radio equipment issued to the battle group includes portable and vehicular radio sets. Portable sets can be carried and operated by one man. Since vehicular sets are normally operated from vehicular power sources, their use is limited to situations and terrain where vehicles can be utilized. Remote control equipment can be used to permit siting of vehicular sets. Modification kits are available as auxiliary equipment to permit the use of certain vehicular set components in a ground role.

c. The tactical use of a radio set depends upon its characteristics. to be capable of operating together, radio sets must have a common or overlapping frequency range, transmit and receive the same type of signal, be located within their operating ranges, and be of the same type modulation. The operating range given in technical manuals pertaining to an individual radio set is for average conditions; the range obtained may be more or less, depending upon the operator's skill, weather, terrain, interference, use of proper antennas and the location from which the set is operated. Power lines and steel structures located close to operating sites reduce operating ranges. The greatest ranges are obtained between sites affording line-of-sight operation.

d. Radio is the least secure means of communication. It must be assumed that interception takes place every time a transmitter is placed in operation; therefore, communication security is a con-

stant consideration when using radios. The enemy obtains valuable intelligence information merely by knowing that friendly radios are operating, by analyzing the number of radios in operation, the volume of traffic, and by determining the locations of the sets. The use of radio may be restricted or prohibited for security reasons. Important measures for defense against enemy radio intelligence are radio silence and cryptography. Normally, messages are encrypted before being sent by radio. The decision to silence radios or to send messages in the clear is made after all the factors have been carefully considered. For example, radios are not silenced when the need for radio communication outweighs the value of the information that the enemy might gain. Radios usually are not silenced within units in contact with the enemy. A message is sent in the clear when prompt action is called for and the urgency of sending the message in the clear outweighs the value of the information to the enemy.

e. Since only one station can transmit at a time, the message-handling capacity of a radio net is limited. The time required for a message transmission to its addressee is primarily dependent upon whether it is encrypted or sent in clear text and upon the volume of traffic of similar or higher precedence awaiting transmission. The speed and message-handling capacity of a radio net is increased by training all operating personnel in radio procedure, net discipline, and by training the using personnel in message writing. Messages usually are written before transmission.

f. The power supply is an important factor in radio communication. Used dry batteries, when approaching the end of their service life, reduce the range of the sets and may render them inoperative at a crucial moment. An adequate supply of serviceable batteries should be maintained for dry battery-operated sets. Every possible effort should be made to obtain maximum service from the batteries through operator training and supervision, and by maintaining a log of hours and conditions of use for each battery pack.

g. By the use of certain types of remote control equipment, a radio operator may be located at a distance from the set he operates. Other remote control units connect a radio set to a switchboard, which makes the radio available to commanders and staff officers through their telephones. Remote control facilities are normally established at the battle group CP. For further details on remote control equipment and the interconnection of radio and wire systems, see TM 11-488.

28. Radio/Wire Integration System

a. An FM-voice radio/wire integration station is operated at each division forward signal center to connect mobile FM radio stations into the division area communication system on a push-to-talk basis. This system of stations is one of the more important features of the area system.

b. This system of integration stations is used to establish communication between mobile FM radio stations and elements connected to the area com-

munication system by telephone. It is also used in lieu of FM radio relay stations to establish communication between FM radio stations operating beyond their rated range. Typical uses of this system are—

- (1) For use by the division commander and his staff, when traveling, to contact division elements connected to the area communication system by telephone, and for use as relay stations in the division CG/Comd Net (FM-voice).
- (2) For initial establishment of telephone service from the division area communication system to the using units, including battle group headquarters, until wire links are established.
- (3) For voice communication between mobile combat elements in the division forward area and those supporting division logistics elements in the rear area who may be connected to the area communication system by wire or radio/wire integration links.
- (4) For communication between low-flying army aircraft operating in remote portions of the division area and the airstrips, or flight control elements connected to the area communication system, in the event direct FM radio contact is impossible.

29. Messenger Communication

a. Messenger, the most secure means of communication, is flexible and reliable. Messenger serv-

ice has some limitations in that it is slow, vulnerable to enemy action in forward areas, and does not permit conversation between the originator and the addressee. It is the only means available within the battle group for transmitting messages such as maps and documents. Messengers are used when security is required and when the time of delivery by messenger is less than that required for message preparation and transmission by other means. Messengers are the best means for transmitting long messages over short distances. They may travel by foot, motor vehicle, or aircraft. In the combat zone, a vehicle driver in addition to the messenger usually is provided for a vehicle used for messenger service. The efficiency of messenger service is improved by the proper selection and training of the messengers.

b. Double messengers are used when the mission involves great personal risk. They keep within sight of each other, but far enough apart to avoid simultaneous ambush or exposure to the same shell or burst of fire. Very important messages may be sent over two different routes utilizing either single or double messengers. Messengers are briefed on their route, rate of travel, and the location of the delivery points. They are told if an answer is expected. If a messenger cannot locate his destination or becomes lost, he reports to the nearest command post and requests assistance. When practicable, a daylight reconnaissance is made of the routes that are to be traveled at night. Oral messages are kept short and simple. They are not used when time

and security permit their being written. Messengers memorize oral messages.

c. When required by the urgency of the message, special messengers are used. When locations are fixed and the amount of traffic warrants a fixed schedule, a scheduled messenger service is established. Messenger relay posts may be established when messages are carried frequently between the same points or units, and, because of distance, difficult terrain, or hostile activity.

30. Visual Communication

a. The use of visual signals is a supplementary means of communication. Visual signals are transmitted by flags, lights, pyrotechnics, panels, arm and hand signals, and other prearranged visual means. They are suitable for transmitting prearranged messages rapidly over short distances when their use is not prohibited for security reasons. The enemy may use similar signals for deception and confusion. Visual signals are easily misunderstood. They cannot be used during poor visibility or when line-of-sight locations are not available.

b. Lights for communication purposes only are not issued. Improvised signaling lights, such as flashlights, may be used to send prearranged messages. The meanings are given in the SOI, or prescribed by the commander. Messages may be transmitted by lights, using the International Morse code.

c. Pyrotechnics, including smoke, are issued in various colors and types. The meanings of certain

signals are given in the SOI. Signals are included for identifying units as friendly, lifting or calling for fire, marking targets, and reporting an objective reached. Transmission and reception of pyrotechnic signals are preplanned. Pyrotechnics can be used for communication within and between ground units, between ground units and aircraft, and between ground units on shore and ships.

d. Two general types of panels are issued for communication with aircraft—marking panels and signaling panels. Marking (identifying) panels are made in bright fluorescent colors. They can be used to mark positions and identify units as friendly. Black and white signaling panel sets are issued for use on light and dark backgrounds, respectively. They are used to transmit brief messages or to identify a particular unit. This is done by using the combined panel system and panel recognition code, which is included in the SOI (par. 32).

e. Infrared devices are used for signaling and as landing and assembly aids. In amphibious operations, they are used as landing aids. Airborne units use them as assembly aids.

31. Sound Communication

Sound is a supplementary means of communication and is available to all units. Sound signals are transmitted by whistles, bugles, horns, gongs, klaxons, weapons, and other noisemaking devices. They are used chiefly to attract attention, transmit prearranged messages, and spread alarms when their use is not prohibited for security reasons.

Sound codes are kept simple to prevent misunderstanding. The range and reliability are greatly reduced by battle noise. Sound signals and their meanings are prescribed in the SOI or are assigned by commanders. Three long blasts of a whistle, horn, siren, or klaxon repeated several times or three equally-spaced shots or short bursts of fire normally are used to warn of an air or mechanized attack. Rapid and continuous percussion sounds made with the standard gas alarm or improvised devices (iron rails and empty shell cases) normally are used to warn of gas attack.

32. Signal Operation Instructions (SOI) and Standing Signal Instructions (SSI)

a. The signal operation instructions (SOI) are a type of combat order issued for the technical control and coordination of communication within a command. They include items covering codes and ciphers, radio call signs and frequencies, telephone directory, and visual and sound signals. Current items are listed in the index to the SOI. The division SOI is prepared by the division signal officer and distributed to lower units. The battle group receives enough copies of the appropriate items of the division SOI for distribution of extracts to the companies and the mortar battery.

b. Standing signal instructions (SSI) may be issued in a separate publication, or the information can be included in the SOI. The SSI includes items of operational data not subject to frequent change and instructions for the use of the SOI. The SSI is prepared by the division signal officer and dis-

tributed to lower units. The battle group receives at least one copy of each item of the SSI.

33. Standing Operating Procedure

An SOP is a set of instructions prescribing the manner in which routine jobs are done within a particular unit in the absence of other instructions. In the battle group, the communication SOP is based on and conforms to the division SOP. The battle group communications officer prepares the signal SOP for the commander's approval. Periodic revision of the SOP is necessary for its effectiveness and conformance with the next higher unit's SOP. An SOP is particularly applicable to the communication platoon because many of its operations are the same regardless of the type of tactical operation. The platoon is not bound to its SOP to the extent that flexibility and individual initiative are destroyed.

34. Paragraph Five of an Operation Order

a. Paragraph 5 of an operation order contains orders and instructions relative to communications and command posts. The battle group communications officer prepares it for his commander's approval. For staff coordination, see paragraph 22. As a minimum, paragraph 5 contains the location of the issuing unit's initial command post or the place to which messages are to be sent. The establishment of wire and messenger service to initial command post locations is facilitated in certain situations when the next higher commander designates the CP locations.

b. Paragraph 5 can be oral or written. Applicable portions of the following instructions are covered in this sequence:

- (1) A reference to the signal annex or index to the SOI in effect; restrictions, if any, on the use of any means of communication; visual and sound signals; and other information not contained elsewhere in paragraph 5, such as lateral lines to be laid.
- (2) The command post location of the unit issuing the order, the prescribed locations of the command posts of the lower units, and the axes of signal communication. The time of opening the command posts also may be given. The information relative to command posts and axis may be shown on an operation map or operation overlay. In this case, it is necessary to give a reference to the operation map or overlay only.
- (3) The location and time of opening an advance message center, march-control point, or other location to which messages may be sent.

35. Oral Communication Orders

After his communication plan is approved, the battle group communications officer issues oral orders to the battle group communication chief. The installation of the communication system may be expedited when available section chiefs also are present. The urgency of the situation may require

the communications officer to issue orders directly to the section chiefs. In this case, the chief is informed of the situation as early as possible. The communication chief's oral orders to the section chiefs may be supplemented by an operation map. Detailed orders for routine operations governed by the SOP are not included. The communication chief's oral orders include—

a. Information of the enemy and friendly forces as required for the efficient operation and security of the communication system.

b. The platoon mission.

c. Instructions to each section chief, which may include any or all of the following:

- (1) Instructions to the chief message clerk concerning the location of the message center and messenger station; schedules and routes; use of codes and ciphers; command post location of lower, attached, supporting, adjacent, and next higher headquarters, and routes to them.
- (2) Instructions to the chief radio operator concerning the location of radio installations; operation instructions and schedules; use of voice radios; location of panel display, message-drop and message pickup grounds; and restrictions, if any, on using radio and visual means.
- (3) Instructions to the wire foreman and team chiefs concerning the switchboard location; number and location of local telephones (including long locals such as

the line to the observation post) ; number and routes of trunklines; and other applicable special instructions.

d. Administrative details including locations of the motor park, bivouac area, and division signal supply point.

36. Communication Security

a. *Communication security* is the protection resulting from all measures designed to prevent or delay unauthorized persons from gaining information of military value from communication sources. It includes physical, cryptographic, and transmission security. Commanders see that communication security orders and regulations are understood and observed by all men concerned with communication. Officers and enlisted men who personally transmit radio messages are concerned particularly with security measures. The commander establishes communication security measures by stating general principles in the unit SOP, by announcing before an operation the extent to which security is to be practiced in that operation, and by making security decisions during an operation. When prompt action is called for, he considers the time in which the enemy can act on the information contained in a clear-text message. He then decides whether the urgency of sending a message in the clear outweighs its value to the enemy. Messages that compromise plans, operations, or cryptosystems of other units are not transmitted in the clear. Messages to be transmitted in the clear by radio operators (including those sent through mes-

sage center) are marked "*send in clear*" over the signature of the commander or his authorized representative. They are signed by the commander or his authorized representative.

b. *Physical security* protects the signal equipment and classified documents (including plain-language copies of messages and carbons) from capture, damage, or loss. Complete items, such as SOI codes and ciphers, are limited in distribution. Complete items of the SOI are not taken forward of the forward area battle group command posts. Before a command post is vacated, it is inspected for messages, carbons, converter tapes, and copies of maps or orders. Wire lines are patrolled to prevent the enemy from tapping them. When SOI, codes, or cryptographic equipment are lost or captured, the facts are reported promptly to the next higher commander. Instructions are issued on how to destroy equipment and classified documents to prevent their capture or use by the enemy.

c. *Cryptographic security* uses technically sound cryptosystems and strict observance of instructions. These measures prevent or delay the enemy from reading messages. Time spent in encrypting gives a high return in security. The use of cryptosystems other than those authorized by the unit SOI compromises security. Most unauthorized systems are susceptible to easy solution and give the user a false sense of security. Security hazards may be minimized by being brief and avoiding stereotyped phraseology in preparing messages (particularly at the beginning and end of a message). Identical

messages are not sent in both clear and encrypted text. When using clear text, landmarks that can be associated with encrypted map locations are avoided as references. When messages cannot be sent in the clear, individuals and small units that do not have cipher devices use prearranged message and operations codes. When using codes that are used by other units, clear and encrypted text (except coded map locations) are not mixed in the same message. When authorized, a reasonable degree of security can be obtained by using codes prepared locally, according to the SOI, and frequently changed.

d. Transmission security limits the enemy's ability to intercept transmissions and prevents him from using our communication systems for deception. A message is transmitted by the most secure means available, consistent with its precedence. Radio is particularly susceptible to interception, position-finding, traffic analysis, and deception. The radio operators are told about the dangers of giving information to the enemy through faulty operating procedures or techniques. Operators and men preparing radio messages must be aware of the enemy's ability to gain information from radio traffic. Those transmitting clear-text messages by voice radio use prescribed radiotelephone procedure and preplan the content and wording of each transmission. They use prescribed authentication systems and eliminate unnecessary transmissions. A high standard of net discipline among operators is essential in maintaining communication security. Training in the correct procedure is continuous.

For additional information on communication security, see AR 380-5 and ACP 122.

37. Communication Training

a. Communication training is conducted in these phases: individual, unit, and combined. During basic military training and advanced individual training, the communication personnel are trained in basic military subjects. They also receive some specialist training in their primary duties. Each man is taught how to fight. Specialist training is conducted best in division and lower unit schools (particularly applicable to radiotelephone and radio-telegraph operators). Certain specialists, such as battle group signal officers, communication chiefs, and radio repairmen, should receive their training at service schools.

b. During basic and advanced unit training, specialist training is completed, and communication personnel are trained in the communication technique for all types of tactical operations. Before participating in exercises involving entire units, command post exercises are conducted with commanders and staffs present. This develops skill in procedure for the installation, operation, and movement of command posts. The personnel are trained to install, operate, and maintain communication systems in fast-moving situations, during all conditions of weather, visibility, and terrain.

c. In the field exercise and maneuver phase (combined arms training) tactics and techniques of communication units working with higher, supporting,

supported, attached, and adjacent units are perfected. This phase includes field exercises and maneuvers. As specialists become proficient in their primary duties, they are rotated to learn the communication duties of other selected key members of their unit.

For further details, see current ATP's.

Section II. COMMAND POSTS

38. General

a. The battle group command post is the battle group field headquarters. When the headquarters is divided into a forward and a rear echelon, the forward echelon is the command post. The command post group consists of the personnel and equipment needed to provide immediate assistance to the battle group commander. Although the commander frequently goes forward to observe and direct the action, he remains in communication with the command post. Contact with the commander can be secured at or through the command post. All communication facilities center at the command post. Administrative activities not required at the command post are conducted at the rear echelon.

b. The division commander or the battle group commander designates the first location of the battle group command post. Higher, lower, and supporting units are kept informed of its location.

39. Selection of Locations

When the division commander does not designate the flag location of the battle group command post, the battle group communications officer and the S1

make the recommendations to the S3. The S3 makes the final recommendation to the battle group commander who in turn makes the decision. When selecting the exact location, the S1 and the communications officer consider the following factors:

a. Type of Tactical Operation. During movement to contact, the command post moves by bounds along a designated route, or it is located at a designated place in the formation. In offensive operations, it is located well forward to avoid early displacement. In defense operations, it is located so that local enemy penetrations will not cause displacement. In other types of tactical operations, the command post is located at the place from which the commander can control his battle group most effectively.

b. Signal Communication Requirements. Command posts are located to facilitate signal communication. An improperly located command post may delay the establishment of communication at a critical time or make maintenance of effective communication impossible. The principal considerations for the command post location with respect to signal communication requirements are—

- (1) Effect of distance and terrain on wire and messenger communication.
- (2) Necessity for wire routes to the front and rear permitting the prompt establishment of wire communication.
- (3) Effect of power lines, electrical stations, hill masses, dense woods, and distance on radio communication.

- (4) Proximity to open terrain for use of air-drop and pickup of messages, and ground-to-air panel displays.
- (5) Necessity for line-of-sight locations, visible only to friendly troops, for use of visual communication.

c. Routes of Communication and Traffic Conditions. Since all communication facilities center at the command post, roads into and out of the command post and the traffic to be expected on these roads influence the command post location. Messengers, wire teams, command vehicles, and other vehicles constantly use the communication routes from the command post forward to lower units and back to higher units. The absence of suitable communication routes causes delays and makes tactical control difficult. When practicable, messengers and wire teams use roads.

d. Space for Command Post Installations. The various installations within the command post are given enough space to operate efficiently and to avoid unnecessary casualties from enemy action. The minimum distance between installations outside of structures is 100 yards. Space is provided for other command posts that may be located in the vicinity and for liaison and agent personnel from other units. An alternate command post location in the general area may be necessary.

e. Cover, Concealment, and Security. In selecting the command post location, consideration is given to the availability of natural concealment, cover, and defensive positions. The command post

should not be located near a landmark or terrain feature that is likely to attract hostile fire or air attack. A location that cannot be seen from main roads is preferable. For security reasons the command post may be located with a lower unit. The CP is dug in or located below the surface of the ground to reduce the effects of atomic weapons.

40. Designation, Marking, and Time of Opening

The command post location is designated near a landmark that is easily identified on the map and on the ground, but which is not likely to be an enemy target. The exact site is located in the general area of the designated point. When shown on a map, the flagstaff base is placed at the designated location. The route leading from the designated location to the exact command post location is marked by signs or guides. Guides only may be used for security reasons. When signs are used, they are large enough to be seen and read from a rapidly moving vehicle. When the command post is in a town, the main roads leading into the town are marked, beginning at the entrance to the town. The headquarters commandant is responsible for placing signs and guides leading to the command post. The message center places the signs or guides to direct incoming messengers to the message center. The command post is opened at the designated time, or when no time is given, as soon as practicable after the order is issued.

41. Interior Arrangement

a. The *battle group adjutant* (S1) is responsible

for the command post's interior arrangement. He selects the locations for all activities except the communication installations. The battle group communication officer selects the locations for the communication facilities. During training, an SOP for the command post arrangement is represented in schematic form to show the locations of command post installations and activities in their relationship to each other. This SOP is used as a guide, and modifications are made as required by the terrain and the tactical situation.

b. The *commander and his staff* are situated to permit efficient operations and convenience. The characteristics of the means of communication are considered in locating communication installations to serve the commander and staff in the best possible manner.

c. The *message center* is located at the natural entrance to the command post so that incoming messengers may find it easily and outgoing motor messengers can be dispatched quickly. A messenger station is selected nearby. Motor vehicles used by messengers are located conveniently with respect to the message center and messenger station.

d. The *radio station* is located at the site that provides the maximum efficiency in transmission and reception. Other considerations include: convenience to the user (especially the message center); location of the panel display, message-drop and message pickup grounds; mutual interference between radio sets; and the possibility of radios being located by enemy direction-finding equipment.

Sets used with remote control equipment are located without regard to the user. Motor vehicles with radio sets installed usually are parked at the radio station.

e. The panel display, message-drop and message pickup grounds should coincide, when practicable, and be near the radio station whose personnel are used for their operation. Level, open ground, free from high weeds and brush and removed from bodies of water, is preferable. The panel display ground should be situated so that observers can read displays at side angles from the vertical. Shadows are avoided, where possible. Unobstructed approaches to the message pickup ground are required. This field also serves as an emergency landing strip for light aircraft.

f. The switchboard is installed in a location convenient to incoming wire circuits and affording as much freedom from noise and interference as possible.

g. Telephones are installed as required, according to the priority established in the battle group SOP.

h. The motor park is established in a covered location accessible to vehicles and at a distance from the command post. It is located so that its detection from the air will not disclose the location of the command post.

42. Operation and Conduct of Personnel

a. The command post is organized for 24-hour operation. During less active periods, the men take

every opportunity to rest and prepare for more active periods. The men on duty are rotated so that they have an opportunity to rest. Communication personnel are continuously prepared to establish new channels of communication and maintain existing channels. Wire lines are particularly vulnerable to enemy fire and are repaired promptly when damaged. Sufficient means of communication must be available at all times to transmit and receive messages rapidly and efficiently.

b. All incoming special messengers report to the message center where they are directed to the sergeant major. The sergeant major signs for the messages or tells the messengers where and to whom they are to be delivered. Special messengers report again to the message center before leaving the command post to pick up any messages for delivery to their unit or activity. Scheduled messengers deliver their messages to the message center; the messages are signed for and delivered to the sergeant major by the message center personnel. The sergeant major supervises the circulation of all incoming messages to the proper staff sections.

c. Outgoing written messages usually are sent through the message center. The message center records include a live file (duplicates or skeleton copies of outgoing messages for which a receipt has not yet been obtained), a dead file (duplicates or skeleton copies of receipted outgoing messages), and a message center log (a record of the electrical means of communication available and the numbers of outgoing messages). The dead file is turned over periodically to the adjutant for disposition. Of-

ficers who send or receive messages that do not pass through the message center see that a synopsis of each message is made available without delay for entry in the unit journal.

d. Vehicular traffic in and out of the command post is controlled. Visitors are stopped at a dismount point and directed to walk to their destination. Their vehicles are sent to the parking area. The communication vehicles required in the command post travel at reduced speed and use existing roads and trails. The troops wear the prescribed uniform and carry the required individual equipment. They work as quietly as possible and avoid unnecessary grouping. Individual and organizational equipment not in use is stored neatly or left packed so that the command post can move quickly. Sanitation and police are rigidly enforced. Latrines are set up near the command post with sufficient capacity to accommodate all personnel. Trash is buried; a fire might disclose the location of the command post to the enemy.

43. Local Security and Defense

The headquarters commandant is responsible for the command post security. Under the supervision of the S3, he prepares plans for the defense of the command post, using available elements of headquarters and headquarters company. Personnel from the reconnaissance, assault gun, and engineer platoons may be used for local security of the CP as directed by the battle group commander. All command post personnel are prepared and trained

to assist in defending the command post. Hasty entrenchments are dug to provide individual protection and for defense of the command post. Communication installations are dug in to protect the equipment and permit continuous operation. The maintenance of secrecy as to the command post location is important. The use of unshielded lights is prohibited. Camouflage is used, where necessary.

44. Axis of Signal Communication

The axis of signal communication is the route along which future command posts are established. When displacement of the command post is anticipated, the division commander or the battle group commander designates the axis of signal communication. The axis is designated by successive probable command post locations in the direction of movement or on a specific route, such as a road or stream, along which the command post will move. The axis extends to the final objective or far enough to provide a guide for displacing the command post until further orders can be issued. The battle group takes advantage of any situation that permits it to use the same axis that a company has used. This practice saves wire and labor, simplifies the communication system, and expedites its establishment.

45. Displacement

a. Displacement of the command post is coordinated to avoid disrupting communication and losing control. Before a location is changed, the minimum communication facilities required at the

new command post are established. This requires that the communications officer be notified well in advance of the estimated time of displacement. Other units concerned are notified of the contemplated change. When the new command post location is not already prescribed, the S3 confers with the battle group communications officer and submits recommendations for the new location to the commander. A quartering party, including the S1, the battle group communications officer, guides, and security and communication personnel, goes to the new location. The communication platoon's advance echelon may follow the quartering party. The exact site is selected, and the locations for the different installations are designated. Communication is established, and guides and security personnel are posted.

b. When the command post site is ready for occupancy, the commander is notified. The command group moves to the new location according to his instructions. Enough personnel, including communication personnel, remain at the old command post to operate and close it. On the commander's orders, the old command post is closed and the new command post opened at the same time. All communication personnel go to the new command post except a guide who remains to direct messengers to the new location.

c. Close coordination between the battle group and the forward signal center supporting the battle group must be obtained to assure that no break in the communication systems occurs during the displacement of the command post.

Section III. TACTICAL EMPLOYMENT

46. Movement to Contact

a. Communication in route column is limited to that for transmitting orders.

b. During movement in tactical column, communication is provided between the battle group march command post and the division commander, adjacent columns, reconnaissance and security elements, lower unit command posts within the column, and supply trains. Communication also is maintained within units in the column. The principal means of communication are radio, motor and foot messengers, and aircraft, when available. They are supplemented by visual and sound signals. When secrecy is necessary, the radios are restricted or silenced. Orders for the march cover the axis of signal communication, use of the means of communication, and command post locations. When information required in the order is covered in the unit SOP, the order merely refers to appropriate parts of the SOP.

- (1) *Radio* is an effective means for controlling units during a march. Command nets may be organized to include platoons. Some secrecy of movement is achieved by using codes and by reporting positions in reference to phase lines and march objectives. Radio nets are organized so that the operating ranges are not exceeded. All commanders and operators familiarize themselves with the details of the net or-

ganization and codes. The radio ranges are reduced during movement and when line-of-sight locations cannot be selected. Light aircraft radios and radios with liaison officers are helpful in establishing radio communication with adjacent columns and between units in extended columns.

- (2) *Messengers* are used by all units during a march. Foot messengers are used from front to rear. Motor messengers are sent to the front or rear, and are used between adjacent columns. Messages can be exchanged between moving vehicles. Light aircraft messengers facilitate communication between adjacent columns, to the distant command posts or higher commanders, and within extended columns. Before the march begins, messengers are informed of the route, the information to be delivered, the locations of command posts, and special vehicular markings.
- (3) *Pyrotechnics* are used for prearranged messages. A common use is for reporting when units reach march objectives or cross phase lines. They may also be used as messages between ground units and aircraft, and antiaircraft or antitank warnings. When prearranged pyrotechnic messages are to be used, lookouts are assigned areas of responsibility in which to watch for them.

- (4) *Panels* are kept ready for use to identify friendly columns, vehicles in a column, command posts, and message-drop and pickup fields to friendly aircraft. Panel teams may leave the column temporarily to communicate with aircraft.
- (5) *Wire* normally is not laid during a march. However, commercial wire systems and existing field wire circuits may be used after coordination with and approval of higher headquarters.
- (6) *Command posts* are located to facilitate column control. Their locations in the column are prescribed and announced in orders. During motor marches, the battle group command post normally travels at the head of the battle group main body. Command posts of other units in the main body are located at the heads of their respective units. During foot marches, command posts may be motorized and move by bounds between units. A motorized command post consists only of essential command and communication vehicles. Communication vehicles include those for messengers, panel teams, radios used during the march, and additional radios for emergency use. A few wire vehicles required during or immediately after the march are also included. Communication personnel not required during the march travel in the headquarters company serial near the command group. Communication

vehicles and transported personnel not required to maintain communication during the march, move near the head of the battle group trains. Communication personnel who cannot be transported, march with the headquarters company, which is usually at the head of the main body.

c. In the approach march, the means of communication used in tactical column are continued. Radio and messenger are the principal means of communication. Light aircraft, when available, and visual and sound communication are used to supplement the principal means. Communication security measures are continued. Prearranged message and operations codes are used extensively except when clear-text messages can be transmitted without violating security restrictions. As units assume extended formations or move across country, messenger communication becomes more difficult. Cross-country marches reduce the speed of the messengers and make march command posts more difficult to locate. Instructions to messengers are more explicit. The use of wire in the approach march depends upon the rate of advance, the distance to be covered, future plans, the speed at which wire can be laid, and the supply of wire. Premature establishment of the wire system results in the loss of wire and overextension of circuits. It delays the installation of communication for the next operation. March command posts are kept well forward, convenient to all command elements, and follow the best available communication routes. Communica-

tion personnel keep abreast of the situation, supervise the operation of the communication system, and plan continuously for future operations.

d. During halts a limited communication system is established. During temporary halts, communication is the same as during the march. During overnight halts and other prolonged halts, messengers are used extensively. The use of radio may be limited by security restrictions. Wire is installed, but is limited by the available wire supply and the duration of the halt. It is desirable for the battle group to have wire communication to lower units during overnight halts. When a quartering party precedes the march, communication personnel are included to establish communication in the bivouac or assembly area.

e. In the assembly area, temporary command posts and a limited communication system are established. The same means of communication are used as in prolonged halts during the march. The communications officer is given timely information of the commander's plan for the next operation. He must have time to make his reconnaissance and submit recommendations for a communication system and command post locations for the next operation. Installing the communication system is easier when the first location for the battle group command post is in the assembly area. When the first command post is to be forward of the assembly area, the communication platoon's advance echelon moves to command post location early, and installs the communication system before the next operation.

47. The Offense

a. The extent of communication required by the battle group during the offense depends on its assigned mission. The battle group communications officer, in close coordination with the battle group commander and staff, insures that provisions for communication are complete, including the communication required between maneuver and fire support units and between all combat and service elements involved.

b. As soon as the battle group communications officer is informed of the attack plan, he makes a map reconnaissance and a tentative plan. When possible, he discusses this plan with the S3 and then makes a ground reconnaissance, accompanied by wire personnel and other platoon members. He submits his recommendations to the S3 for paragraph 5 of the operation order.

c. Following the issuance of the attack order, the battle group communications officer completes the coordination of his plans with the S1, S2, and S3, the mortar battery, and supporting artillery. He then proceeds to the designated command post area with the S1 to determine its exact location and interior arrangement. As soon as possible after the first command post locations has been approved, the battle group communications officer contacts the communication chief and has the bulk of the communication platoon sent forward. The battle group communications officer immediately contacts the platoon leader of the supporting battle group area support platoon and notifies him of the exact loca-

tion of the battle group command post. The battle group communications officer and his section chiefs may precede the platoon to the designated command post location to receive orders and to reconnoiter before the platoon arrives. The remainder of the platoon continues to provide communication in the assembly area until the command post for the attack is occupied.

d. Radio is the principal means of communication in the attack; however, wire should be used when it can be established and maintained. An installation section from the division support platoon lays trunklines from the forward signal center into the battle group command posts. Direct support artillery units lay lines to the battle group switchboard and the mortar battery FDC. The communication platoon lays one trunkline to each rifle company, one to the mortar battery, and one to each attached unit. The observation post and certain radio remote control units are connected to the switchboard. The circuit to the observation post may be established through a rifle company switchboard. Wire lines from higher and supporting units and to lower units may be simplexed to provide additional circuits. When time is available, local lines are laid to all the platoons of the headquarters and headquarters company. Normally, lateral lines are not laid during an attack. Lateral communication is made through the division forward signal centers.

e. Radio is used to the maximum extent, but for secrecy and surprise its use may be restricted until

a prescribed time. Radio silence is not carried to the point of making it a handicap rather than a protection. When it is probable that the enemy knows the location or anticipates the movements of friendly units, or after contact is made, there is little to gain by imposing radio silence.

(1) Radio nets operated within the battle group are flexible and may be altered as required by the situation. The number of available frequencies varies. At times, more than one net may operate on the same frequency, except for those frequencies assigned the mortar battery. The battle group communicates with division in four different radio nets—

- (a) One amplitude modulated radioteletypewriter (AM-RTT) operating in the division intelligence/operation net.
- (b) One amplitude modulated radioteletypewriter (AM-RTT) operating in the division command/operation net.
- (c) One amplitude modulated (AM) radio operating in the division air request net.
- (d) One frequency modulated voice (FM-voice) operating in the division CG/command net.

The battle group command net includes the rifle companies, mortar battery, reconnaissance platoon, assault gun platoon, signal officer, S2, S3, S3 Air, and battle group commander (fig. 3). The

battle group also establishes an administrative net which includes the rifle companies, supply and maintenance platoon, engineer platoon, medical platoon, S4, and headquarters company (fig. 4).

- (2) Radio sets are available for communication with the battle group observation post and for direct communication with light aircraft, supporting artillery, engineers, and reconnaissance units.
- (3) When the battle group commander leaves the command post, he takes with him whatever radios and operators he needs. The types of radios he takes are determined by the nets in which he desires to communicate.

48. Night Attack

a. Wire is the best means of communication to use during a night attack. Wire is laid to the attack echelon, to fire support units, and to the reserve. When possible, wire communication is maintained throughout the attack and during the reorganization and consolidation.

b. When the attack is conducted with the aid of continuous fire support, radios may be used after the attack is discovered. When an attack is conducted by stealth, radio operators listen on assigned radio frequencies but do not transmit until told to do so by the net control station.

49. Defense

The communication system for a defense is more elaborate than for an attack. Two or more lines are laid over different routes between the battle group command post and subordinate units. Lateral wire communication between battle groups is obtained through the forward signal centers. Lateral communication between battle group units are established. Wire communication is established to the battle group command post by the forward signal center. Simplex and phantom circuits are used to provide additional channels of wire communication. Scheduled messenger service is established to relieve the traffic from the wire system. For security reasons, radio communication usually is restricted until the enemy makes contact with units in the battle positions. When wire communication is available, radio transmitters are not used; when wire communication is interrupted, radio nets are opened and ready for use. During the defense, the communication system is constantly improved to assure uninterrupted operation.

50. Withdrawals

a. Communication during *withdrawals from action* is characterized by detailed planning in advance and close coordination during the withdrawal. Existing communication channels are maintained as long as available equipment and restrictions imposed by higher commanders permit.

b. When the battle group is forced to execute a *daylight withdrawal*, the communication platoon, when possible, establishes, operates, and maintains communication facilities similar to those required in a night withdrawal. However, a daylight withdrawal seldom permits as much detail planning and preparation as a night withdrawal.

c. A *night withdrawal* is characterized by deliberate planning, detailed reconnaissance, and extensive supervision. The communication plan is carefully prepared to support the tactical plan. During the movement to the rear, communication is necessary in the old position and within the new battle position, or area to which the battle group is moving.

- (1) Reconnaissance of the withdrawal routes determines what existing wire circuits can be used. Communication is provided to assembly areas, march-control points, and between the forward and rear positions. An early reconnaissance of the rear position is necessary for timely completion of the communication system there. Limits on the size of reconnaissance parties usually permit only the communication platoon wire section personnel to reconnoiter the new position.
- (2) Existing communication facilities are maintained in the old position by the detachments left in contact. Command posts close on order, or when taken over

by the detachments left in contact. The communication chief or his representative remains with the detachments left in contact. The minimum additional communication personnel remain in the old position to operate the communication system for the detachments left in contact. When time permits, unused wire lines are recovered or sections are moved to prevent their use by the enemy. Deceptive measures include using dummy radio stations and simulating normal radio activity in the old position.

- (3) Messengers and available wire circuits are the principal means of communication during a withdrawal. The staff and liaison officers help the commander control the movement. Communication can be provided at march-control points by splicing telephones into existing wire circuits. Radio silence is ordered; however, the radio operators continue to listen on assigned frequencies. If the enemy discovers the withdrawal and more control is needed, the higher commander may direct that radios be used.
- (4) The majority of the communication platoon moves to the rear position as early as practicable to establish communication facilities at the new position before the main body arrives. When the defense is to be resumed on the new position, a

complete defense wire system is installed as early as possible. Wire lines between the division forward signal center and the old position are intercepted and connected to the battle group switchboard at the rear position. The radios continue to listen on assigned frequencies, but remain silent until the battle group commander deems operation necessary. When the withdrawal is to be followed by some other type of operation, minimum essential communication is established within the battle group assembly area and to the outpost until plans are made for the next operation. Reconnaissance and plans for communication for the next operation are completed as soon as possible.

51. Delaying Action

In a delaying action, emphasis is placed on speed and mobility in establishing communication. Existing wire lines along the axis of operations are used during movement to the rear. A minimum lateral wire system is installed on each delaying position to include one line to each rifle company and the mortar battery. Visual signals and motor messengers are used. Communication to distant, detached, and motorized or mechanized units usually is limited to radio and messenger. Timely reconnaissance and planning are necessary for communication on successive delaying positions.

New wire lines usually are not laid for communication between successive positions.

52. Retirement

Communication during a retirement is similar to communication during movement to contact. When the enemy attempts to pursue vigorously, a series of delaying actions may be necessary to assist the retiring force to disengage. In this case, communication is maintained in the same way as described for a delaying action.

53. Relief of a Battle Group in Contact

Before the relief occurs, the battle group communications officer and key men from the communication platoon accompany the battle group commander and his reconnaissance party. They familiarize themselves with the communication system already in operation. Arrangements are made with the unit being relieved to exchange certain equipment and to take over the existing wire system in place. Equipment requiring extensive installation is exchanged. During the reconnaissance, the key wiremen familiarize themselves with all wire routes. The communications officer obtains a line-route map, circuit diagram, traffic diagram, and radio net diagram. He gets as much information as possible about road conditions and routes for messengers. He evaluates the conditions that affect radio communication and the probable interruptions of wire communication.

Strict secrecy measures are taken to prevent the enemy from discovering the relief. These measures may include continuing the use of existing call signs, frequencies, codes, and ciphers of the unit being relieved.

54. Airborne Operations

a. Special communication problems arise during the assault phase of an airborne operation. Because of the dispersion of the units on landing, speed of action, and distances involved, communication is relatively difficult to establish.

b. During the assembly and reorganization of a battle group after being air-landed, radio is the principal means of communication. It is supplemented by messengers and other means to a lesser degree. The installation of the wire system is started as soon as practicable. To facilitate and expedite the establishment of the wire system within the battle group, wire laying teams and their equipment from the communication platoon may be landed with the rifle companies. Command radio nets usually are opened immediately after landing to help control and speed the assembly. Portable radios are habitually carried into the landing area to facilitate prompt opening of radio nets on landing. Radio communication to the next higher commander is established immediately after landing. Communication with cooperating aircraft and naval forces is provided through the air control teams. When an airborne operation is near the seacoast, naval gunfire teams also may

accompany the landing and provide communication with naval support craft.

c. The size, weight, and amount of equipment landed with the battle group during the assault are limited. Only equipment that is carried with the men in their transporting aircraft is available at first. This equipment includes portable voice radios and batteries, field telephones, light wire, panels, and small switchboards. Larger reserves of communication supplies and equipment are necessary to compensate for losses during the landing. Resupply plans include equipment and supplies to meet communication requirements.

d. Communication personnel are assigned throughout air serials. A radio operator assigned to a unit commander or staff officer accompanies the officer in the same aircraft. Communication vehicle drivers land with their vehicles.

e. To acquaint himself with the tactical situation and to receive additional information and orders, the battle group communications officer assembles with the commander and staff. He makes his plans flexible to meet any requirement of a rapidly changing situation.

f. The communication chief assembles the communication platoon. The platoon, less radio operators, wire teams, and messengers on special assignments, normally assembles with the headquarters company. The communication chief reports the status of his men and equipment to the communications officer as early as possible. He directs the implementation of the communica-

tion plan. He maintains contact with the communications officer to execute orders. The battle group command post is established immediately after the landing. When possible, the CP is opened in its predetermined location. After units have assembled and established their command posts they exchange messengers.

g. Reorganization is not complete until the battle group has assembled according to plan, and until command and fire-control communication channels are established. After the initial units have been air-landed in the airborne assault and subsequent buildup of troops and equipment is underway, communication in the battle group will proceed as in normal ground operations.

CHAPTER 3

RECONNAISSANCE PLATOON

Section I. GENERAL

55. General

This chapter deals with the tactical employment of the reconnaissance platoon when the battle group is conducting offensive, defensive, or retrograde operations. The platoon normally operates under battle group control. Under certain conditions the platoon is attached to task forces organized within the battle group for specific operations. The reconnaissance platoon can be air-transported in strategic aerial deployments utilizing very large Air Force aircraft. However, the tanks and armor personnel carriers of the platoon are not air-transportable for tactical airborne operations employing existing medium transport aircraft.

56. Mission

The primary mission of the reconnaissance platoon is to perform reconnaissance and provide security for the unit to which it is assigned or attached.

57. Organization

a. General. The platoon consists of a platoon headquarters, a scout section, a tank section, a rifle

squad, and a support squad. All personnel of the platoon should be trained to function as a member of any of these elements. The personnel in the scout section and the rifle squad are also trained in demolition and pioneer work (fig. 5).

b. Characteristics.

- (1) *Movement.* The platoon is completely mobile and is capable of rapid movement on roads and trails. The tracked vehicles provide excellent cross-country mobility.
- (2) *Firepower.* The 76-mm gun, mounted on the light tank, provides limited antitank protection for the platoon and provides a large caliber direct fire weapon capable of being used against personnel, vehicles, and light fortifications. A high proportion of automatic weapons fire is provided by the machineguns of the tank section and the scout section, and by the machinegun and automatic rifles of the rifle squad. Limited indirect fire support is provided by the support squad.
- (3) *Armor protection.* The protective armor of the light tanks and the armored personnel vehicles permit freedom of movement to the tank section, the rifle squad, and the support squad in the face of small arms and light artillery fire.
- (4) *Excellent communication.* The platoon leader has radio communication with all sections and squads of his platoon. A

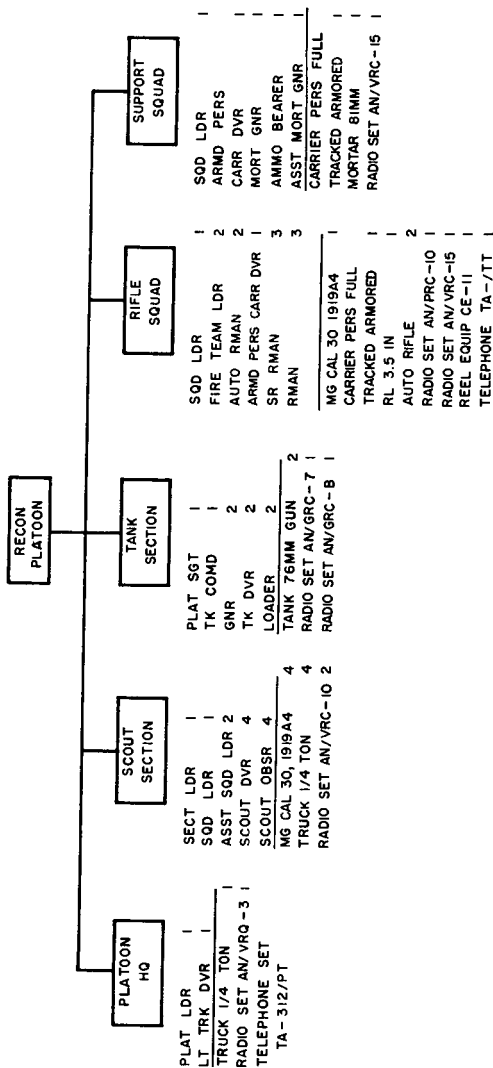


Figure 5. Reconnaissance platoon.

limited wire capability exists (fig. 6).
(par. 59 below).

58. Duties of Key Personnel

a. Platoon Headquarters. The platoon leader is responsible for the training, control, supply, and tactical employment of his platoon. He operates under the control of the battle group commander.

b. Scout Section.

- (1) The *section leader* is responsible for the training, control and tactical employment of the section, as directed by the platoon leader. He commands one of his scout squads.
- (2) The *squad leader* commands the remaining squad of the section. He employs the squad as directed by the section leader. He commands the section in the absence of the section leader.
- (3) The *assistant squad leader* commands the squad in the absence of the squad leader.

c. Tank Section.

- (1) The *Platoon sergeant* normally rides with and commands the tank section, and performs other duties as directed by the platoon leader. He is second in command of the platoon and commands the platoon in the absence of the platoon leader. He is charged with the administrative and logistical requirements of the platoon.

- (2) The *tank commander* commands the tank not occupied by the platoon sergeant or the platoon leader.

d. Rifle Squad. The *squad leader* is responsible for the training, control, and tactical employment of the squad as directed by the platoon leader.

e. Support Squad. The *squad leader* is responsible for the training, control, and tactical employment of the squad as directed by the platoon leader.

59. Communications

a. General.

- (1) *Platoon headquarters.* There is one AN/VRQ-3 radio and one telephone set in the platoon headquarters. The radio is mounted on the platoon leader's 1/4-ton truck.
- (2) *Scout section.* There are two AN/VRC-10 radios in the section, mounted on the section leader's and squad leader's 1/4-ton trucks.
- (3) *Tank section.* There is one AN/GRC-7 radio mounted in the platoon sergeant's tank and one AN/GRC-8 radio mounted in the other tank.
- (4) *Rifle squad.* There is one AN/VRC-15 radio mounted in the squad's armored personnel carrier and one AN/PRC-10 radio to be used by the squad when dismounted. There is one reel equipment CE-11, and one telephone TA-1/TT for wire communication.

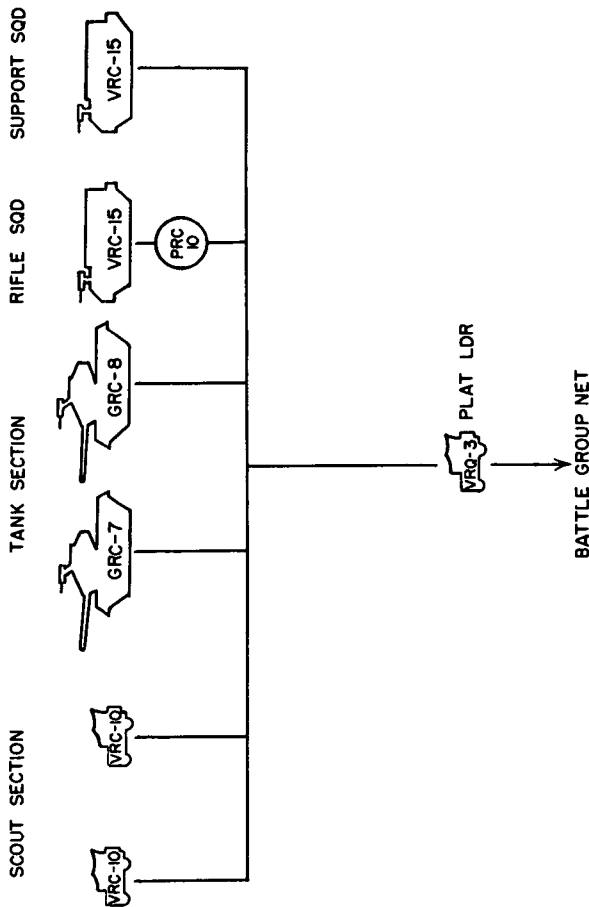


Figure 6. Reconnaissance platoon radio net.

- (5) *Support squad.* There is one AN/VRC-15 radio mounted in the squad's mortar carrier.

b. Radio Nets. The VRQ-3 in the platoon headquarters operates in the battle group net and the platoon net. The GRC-7 in the platoon sergeant's tank monitors the battle group net in addition to operating in the platoon net. All other radios within the platoon operate in the platoon net (fig. 6).

c. Wire Nets. The telephone in the platoon headquarters operates in the battle group net.

60. Capabilities

In the accomplishment of its assigned missions, the reconnaissance platoon has the following capabilities:

a. Engaging in limited offensive, defensive, and delaying actions.

b. Performing limited independent operations with or without the support of other units or weapons.

Section II. FUNDAMENTALS AND TECHNIQUES OF RECONNAISSANCE AND SECURITY

61. Basic Concepts

a. Reconnaissance missions may be performed by stealth or offensive action.

b. Security missions may be performed by patrolling, manning observation posts, or by actively engaging the enemy when necessary.

c. When a mission requires contact with the enemy forces, the reconnaissance platoon employs the techniques of attack, defense, and delaying action as prescribed in section III.

62. Characteristics of Employment

a. *Centralized Control.* Actions of the reconnaissance platoon must be coordinated at battle group level with the action of other units, including those of adjacent and higher headquarters.

b. *Independent Actions.* Missions assigned the reconnaissance platoon may require it to operate at extended distances or beyond the supporting range of the battle group. The platoon has the capability of conducting limited independent action.

63. Reconnaissance

a. *Definition.* Reconnaissance is the directed effort in the field to collect information of the enemy and the area of operation.

b. *Fundamentals.*

- (1) *Report all information.* The primary purpose of reconnaissance is to secure information which may be used as a basis for tactical plans. All information must be reported regardless of its apparent value. When considered in conjunction with information obtained from other sources, it might be extremely valuable to higher headquarters.
- (2) *Submit accurate and timely reports.* Reports must be accurate and answer the questions what, when, where, and how

many. The reports must be transmitted rapidly if the information is to be of value to the battle group. Communication with the battle group must be maintained to expedite the transmission of reports.

(3) *Avoid decisive engagement.* The platoon secures information without engaging the enemy when possible, but fights when necessary. The platoon frequently finds it necessary to engage in combat to accomplish its mission. The platoon leader's decision to engage the enemy is based on his assigned mission and on the immediate situation confronting him. The platoon must not become engaged to the point where losses would jeopardize the accomplishment of its mission.

(4) *Maintain contact with the enemy.* When either physical or visual contact is made with the enemy, every effort of the reconnaissance platoon is exerted to maintain it. The reconnaissance platoon does not voluntarily break contact with the enemy unless maintenance of contact seriously interferes with the accomplishment of an assigned mission, or unless ordered to do so.

c. Frontages. The reconnaissance platoon is limited in the frontages over which it can successfully operate by the following factors: road net, mission, terrain, and effective range of radio communication. The platoon operates more effectively when employed as a unit.

d. *Specific Reconnaissance Missions.*

- (1) *General.* The reconnaissance platoon may be given the mission of reconnoitering a route, zone, or area. Factors to be considered in determining the mission to be assigned are—the information desired, where the information is to be sought, the known enemy situation, the terrain, the weather, and the time available for completing the mission. The platoon, in performing its mission, continually monitors for the presence of chemical, biological, or radiological contamination or activity in the area of the battle group.
- (2) *Route reconnaissance.* Route reconnaissance is the directed effort to obtain information of the enemy or the terrain along a specific route and on the terrain features that dominate the route. The platoon conducts a route reconnaissance by moving on the route in column formation with the scout section reconnoitering the terrain features which dominate the route. The platoon gathers specific information to include the nature of the terrain, the conditions of existing roads and their lengths, load classification and condition of bridges and other stream crossing means, obstructions, and bottlenecks (fig. 7).
- (3) *Zone reconnaissance.* Zone reconnaissance is the directed effort to obtain informa-

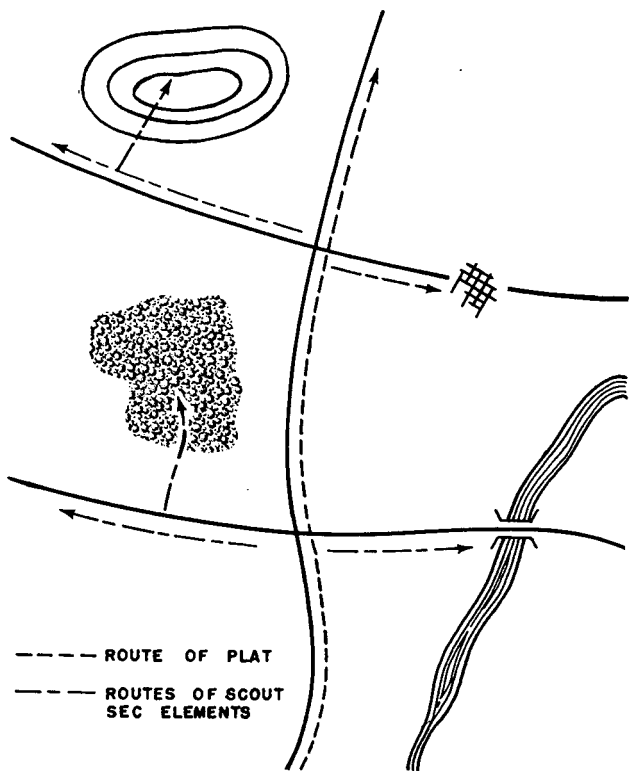


Figure 7. Route reconnaissance.

tion of the enemy or terrain between two assigned boundaries. All roads and terrain features within the zone must be reconnoitered. The same type information as listed for the route reconnaissance is obtained. The reconnaissance platoon conducts a zone reconnaissance by advancing

in column formation on the best road within the zone. The scout section reconnoiters other roads and terrain features between the assigned boundaries overwatched by the rest of the platoon (fig. 8).

- (4) *Area reconnaissance.* Area reconnaissance is the directed effort to obtain information

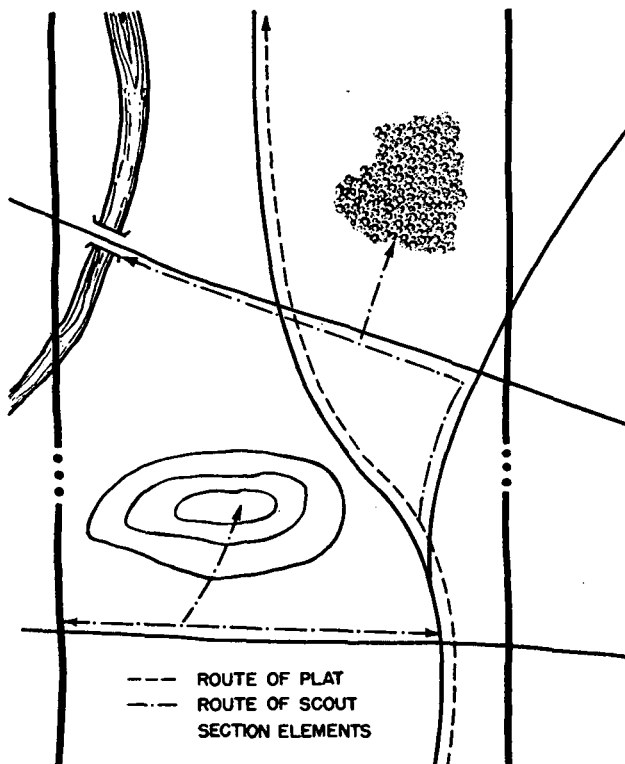


Figure 8. Zone reconnaissance.

of the enemy or the terrain within a definitely defined locality. The area to be reconnoitered need have no connection with the terrain over which current operations are being conducted (fig. 9). The reconnaissance platoon conducts an area reconnaissance by moving over the most direct route to the area to be reconnoitered. The reconnaissance of the area is then conducted using the same technique as that used for the zone reconnaissance. An area reconnaissance mission is assigned when detailed information of the enemy or the terrain in a specific locality is desired. An example of such a mission is the reconnaissance of a bridge, town, possible enemy location, tentative assembly area, or possible contaminated area.

e. Basic Formations.

- (1) There are two basic formations used by the platoon in the performance of reconnaissance missions. These formations are shown in figures 10 and 11. The formation selected by the platoon leader is based on the terrain and the location of suspected enemy positions, to include the probable location of antitank weapons, minefields, and obstacles.
- (2) The reconnaissance platoon in the performance of a reconnaissance mission employs the advance to contact formation with the scout section leading (fig. 10). This allows for a greater flexibility and

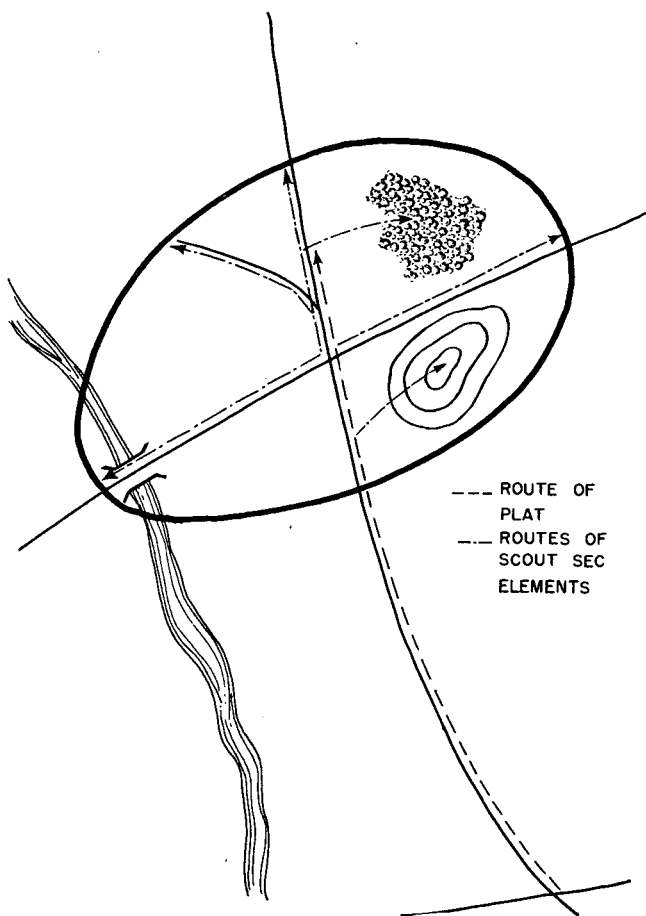


Figure 9. Area reconnaissance.

freedom of movement, and permits the development of the situation prior to committing the combat elements of the platoon.

- (3) The tank section may lead the formation with the scout section employed on the flanks by squad (fig. 11) when—
 - (a) The platoon is approaching a suspected enemy position.

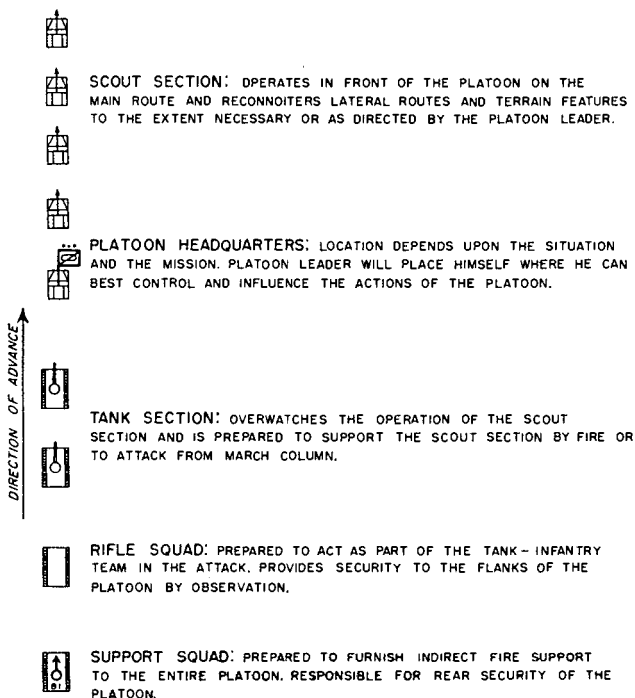
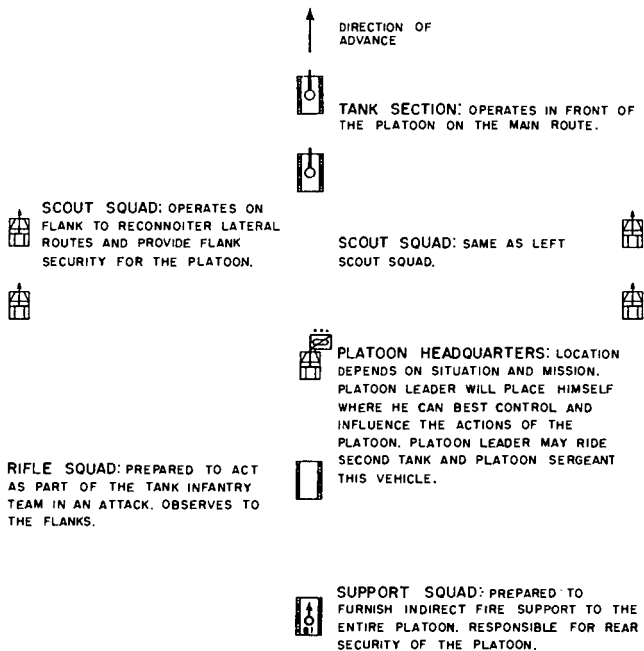


Figure 10. Reconnaissance platoon advancing to contact—scout section leading.

- (b) It is necessary to insure the uninterrupted advance of the platoon against delaying forces employing harassing small arms and artillery fire.

f. Conduct of the Reconnaissance.

- (1) In general, reconnaissance missions are executed boldly and aggressively, making full use of the platoon's mobility and firepower. However, maximum use is made



*Figure 11. Reconnaissance platoon advancing to contact—
tank section leading.*

of the scout section's capability for rapid and relatively quiet movement in order to accomplish the mission with as much secrecy as possible. The scout section executes the reconnaissance mission closely supported by the remainder of the platoon.

- (2) The platoon attacks, when necessary, in the performance of its reconnaissance mission. Before committing his unit to an attack, the platoon leader must be relatively certain of success. Care must be exercised not to commit the platoon in an attack in which the losses might be so great as to prevent further accomplishment of the reconnaissance mission.

g. Reconnaissance by Fire.

- (1) Reconnaissance by fire is accomplished by firing into likely or suspected enemy positions in an attempt to cause the enemy to disclose his presence by movement or by return fire. During reconnaissance by fire, personnel with binoculars must continually observe the positions being reconnoitered so that any enemy movement or return fire is definitely located.
- (2) Reconnaissance by fire is a technique used when time is critical or the terrain does not favor the employment of patrols. It is employed at the loss of secrecy because it discloses the platoon's location and alerts the enemy to its presence in the area.
- (3) If the enemy returns the fire, the platoon proceeds to develop the situation. If the

fire is not returned, the position is reconnoitered and the platoon continues on its mission. However, while reconnoitering the position, caution should be exercised since reconnaissance by fire may fail to draw the fire of seasoned enemy troops.

h. Development of the Situation.

- (1) When enemy contact is made or an obstacle is encountered, the situation is developed quickly. The enemy's strength, location, composition, and dispositions are determined, with a special effort being made to determine the flanks of the position. In keeping with the mission, a decision is made to attack, bypass the position, or maintain pressure on and contact with the enemy. An enemy position will be bypassed only on order.
- (2) When possible, the scouts deploy and reconnoiter the enemy position with mounted reconnaissance and reconnaissance by fire. If the terrain or enemy action restricts vehicular movement, the situation is developed with dismounted patrols from the scout section or the rifle squad.

i. Reconnaissance of a Bridge or Defile. Visual reconnaissance is made for enemy positions before the leading elements cross a bridge or pass through a defile. When mines, boobytraps, or ambushes are suspected, patrols from the scout section, overwatched by tanks, reconnoiter the approaches,

banks, and the bridge or defile. Reconnaissance of a bridge includes searching for demolition charges or purposely weakened construction. Any mines, boobytraps, or demolition charges located must be removed or neutralized.

j. Reconnaissance of a Town, Obstacle, or Enemy Position.

- (1) When the platoon has been assigned the mission of reconnoitering a town, obstacle, or enemy position, an attempt should be made to approach it from the flanks or rear (fig. 12). If time is available, the reconnaissance should be made dismounted. Frequently, however, time is critical and the platoon remains mounted. In either case, detailed observation with binoculars precedes the actual reconnaissance.
- (2) When time is available, dismounted patrols from the scout section or rifle squad move forward covered by the remaining elements of the platoon. The number of patrols depends upon the size of the objective, the available approaches, and cover and concealment. When the patrols find the near edge of a town clear, the remainder of the unit moves forward. The dismounted patrols then continue the reconnaissance, overwatched and closely followed by the rest of the platoon.
- (3) When speed of advance is essential and time cannot be taken to approach towns from the flanks or to perform dismounted

reconnaissance, the scouts accomplish the reconnaissance mounted. In this case, the scout elements, after a visual reconnaissance with binoculars and reconnaissance by fire, move forward rapidly, overwatched by the remainder of the platoon. If the near edge of the town is clear, the overwatched elements move forward and the advance continues. Vehicles move through the town by bounds, in a staggered formation, close to the buildings, covering the buildings on the opposite side of the street by observation and fire (fig. 13).

k. Control.

- (1) The platoon leader controls and coordinates the movement of his platoon primarily by radio. The platoon leader places

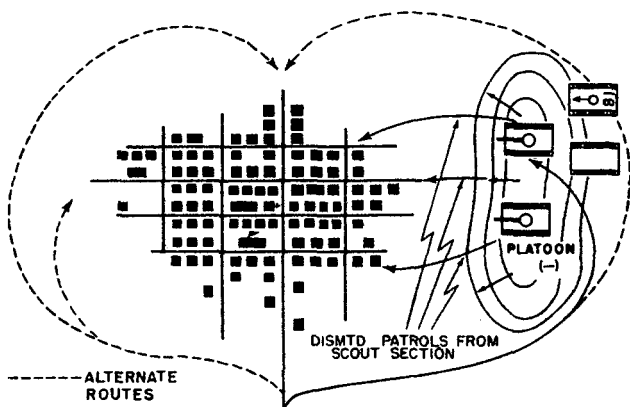


Figure 12. Reconnaissance of a town.



Figure 13. Passage through a town.

himself in a location where he can maintain contact with and control all elements of the platoon. He is prepared to move rapidly to any portion of his area to supervise a critical action.

- (2) To assist in the control and coordination with other reconnaissance units, the platoon may be assigned phase lines, check points, or contact points. Normally, the platoon reports but does not stop on reaching or crossing phase lines unless otherwise directed by the battle group commander.

l. Reconnaissance Orders and Instructions.

- (1) A reconnaissance mission is assigned to the platoon as a unit. Instructions normally are issued orally to the platoon leader. When more than one mission is assigned, a definite priority must be given.
- (2) Missions must be specific. Instructions to the platoon, squads, and sections must be complete and must include—
 - (a) Available information on the enemy and friendly troops in the area of operation.
 - (b) Plans of the higher commander.
 - (c) Specific information desired.
 - (d) Zone, area, or route to be reconnoitered.
 - (e) When, where, and how information is to be reported.
 - (f) Time of departure.
 - (g) Formations and control measures, such as phase lines, check points, and contact points.

- (h) Time mission is to be completed.
- (i) Action after the mission is completed.
- (3) The platoon leader issues instructions orally to his platoon. Unless the immediate situation makes it impractical to do so, squad and section leaders are assembled to receive the order. After the reconnaissance has started, necessary additional instructions are disseminated by radio, messenger, or by the platoon leader in person.

m. Reconnaissance at Night. Reconnaissance operations are slower and less effective at night. Night reconnaissance is usually limited to dismounted patrolling, observation of routes, and the use of listening posts. Only against very light enemy resistance and with favorable terrain and routes of advance can vehicular reconnaissance be used without being preceded by dismounted patrols. Except for short cross-country movements, night vehicular reconnaissance should be confined to the road net.

64. Security

a. Definition and Purpose. Security includes all measures taken by a command to protect itself from observation, sabotage, annoyance, or surprise by the enemy. Its purpose is to preserve secrecy and to gain and maintain freedom of action.

b. Fundamentals

- (1) *Orient on the main body.* The reconnaissance platoon performing a security mission positions itself between the main body

of the unit it is protecting and a known or suspected enemy. The platoon regulates its rate of movement to that of the main body.

- (2) *Report information promptly.* The speed with which information of the enemy is reported by the platoon is of primary importance. The battle group commander must have early warning of the location and movement of enemy forces which constitute a threat to his mission.
- (3) *Provide reaction time.* There is no set distance that the platoon operates from the main body. The platoon operates at sufficient distance from the battle group to provide the time and space for the battle group to react to an enemy threat.
- (4) *Maintain contact.* When contact with the enemy has been made, it is maintained as long as the enemy presents an immediate threat to the main body. It is essential that enemy forces not be permitted to penetrate the security force unobserved and surprise the main body. If the enemy force moves out of the area or responsibility of the reconnaissance platoon, adjacent units must be informed. The adjacent unit may be informed directly by the reconnaissance platoon or through the battle group.
- (5) *Avoid decisive engagement.* The reconnaissance platoon avoids decisive engagements. It does not have the mission of

destroying the enemy force as part of its security mission.

c. Specific Security Missions.

(1) *Security patrolling.* The reconnaissance platoon may receive the mission of providing security to the front, flanks, or rear of the battle group. For considerations, see FM 7-40.

(a) *Security patrolling to the front* (fig. 14).

1. When the battle group is moving on one route or axis, the platoon positions itself in front of and along the route or axis of advance of the battle group. It uses one of the two basic formations prescribed in paragraph 63. The platoon operates as prescribed for the route reconnaissance as described in paragraph 63. When the battle group is moving on multiple routes or axis, the reconnaissance platoon normally moves on the most dangerous route or axis. The platoon then operates as prescribed for the zone reconnaissance as discussed in paragraph 63.
2. The distance the platoon operates forward of the battle group is prescribed by the battle group commander. It is based on the known enemy situation, the terrain, the location of other friendly reconnaissance units, the rate of movement of the main body, and the mission of the battle group.



Figure 14. Security patrolling to the front.

- 1 Reconnoiter lateral roads.
- 2 Reconnoiter woods for suspected enemy.
- 3 Reconnoiter hill for suspected enemy position.

Figure 14—Continued.

3. When contact with the enemy is made, the platoon leader reports the information promptly and develops the situation. The platoon acts aggressively to push aside enemy resistance within its capability. When strong enemy resistance is encountered, the platoon continues to reconnoiter the enemy position, keeping it under observation and awaiting further instructions.
 4. The platoon does or does not bypass enemy resistance, dependent upon orders of the battle group commander. It may receive the mission of finding a bypass to be used by the remainder of the battle group.
 5. The attack is the most common type of combat action employed by the reconnaissance platoon when conducting security patrolling to the front.
- (b) *Security patrolling to the flank* (fig. 15).
1. The platoon protects the main body from ground observation, enemy direct fire, and surprise attack; and provides time and space for the main body to react to an enemy threat. The platoon

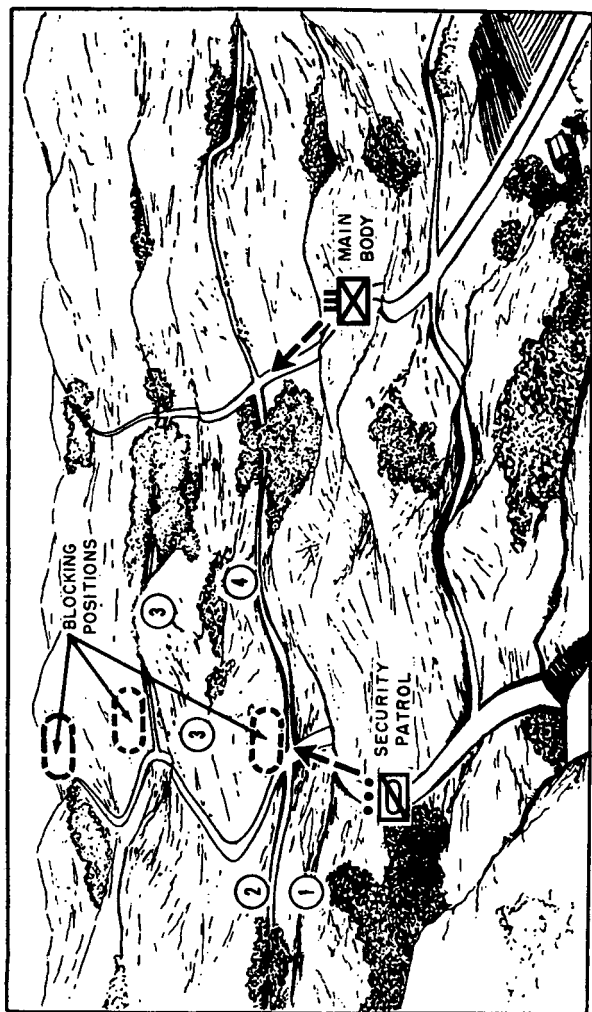


Figure 15. Security patrolling to the flank.

- 1 Reconnoiter woods for suspected enemy.
- 2 Reconnoiter road to the flank.
- 3 Reconnoiter hills for suspected enemy position.
- 4 Send patrol to make contact with main body.

Figure 15—Continued.

may be the flank guard of the battle group or it may be a part of a stronger flank guard.

2. The platoon positions itself on the flank of the main body. Whenever possible, it moves on a route parallel to that of the main body and regulates its speed of movement to that of the main body.
 3. The distance the platoon operates from the main body is prescribed by the battle group commander. It is based on the same considerations listed for the platoon conducting security patrols to the front as prescribed in *c*(1)(a) above.
 4. The platoon maintains radio or visual contact with the main body or the remainder of the flank guard. Blocking positions are selected on critical terrain features which dominate likely avenues of enemy approach into the flank of the main body. These positions may be assigned by higher commanders or they may be selected by the platoon leader.
- (c) *Security patrolling to the rear* (fig. 16).
1. The platoon protects the rear of the

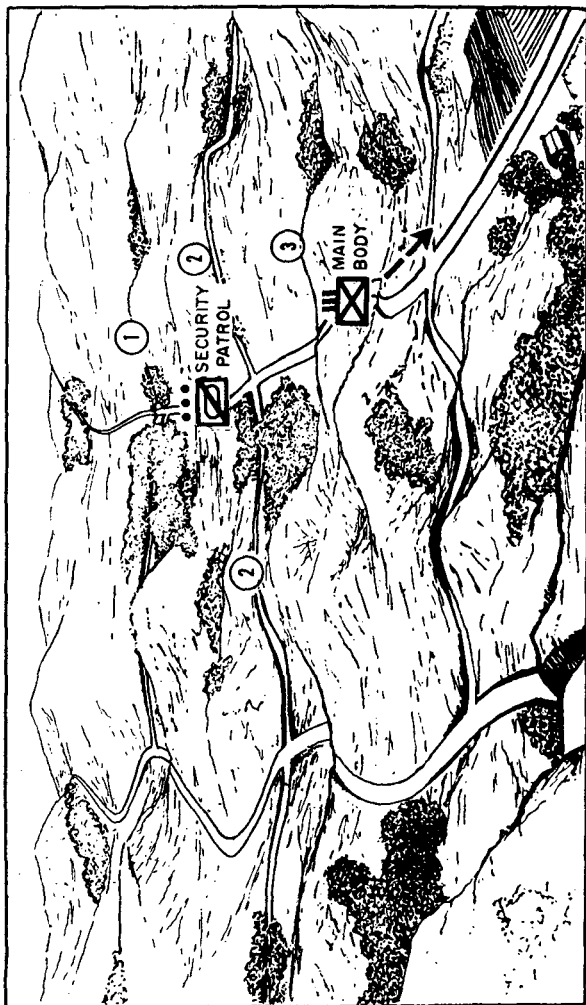


Figure 16. Security patrolling to the rear.

- 1 Occupy delaying position.
- 2 Reconnoiter lateral roads on movement to next position.
- 3 Next delaying position to be occupied.

Figure 16—Continued.

main body from attack, observation, or interference by the enemy.

2. The platoon positions itself in rear of and follows the main body. It moves on the same route or axis as the main body, or on the most dangerous route or axis when the battle group is moving on multiple routes or axes. The platoon may be the battle group rear guard or it may be part of a stronger rear guard.
3. The platoon performs reconnaissance to its flanks to insure that an enemy force does not envelop its flanks and attack the rear of the main body. The distance the platoon operates from the main body is prescribed by the battle group commander. The platoon regulates its movement on that of the main body.
4. When the main body is halted or is moving slowly, the platoon moves by bounds. When the main body is moving rapidly, the platoon follows the main body at a prescribed distance.



① The area between the two OP's should be patrolled because of poor observation.
Figure 17. Screening.

(2) *Screening* (fig. 17).

- (a) The reconnaissance platoon performing a screening mission provides early warning of enemy activity. The platoon observes, reports, and maintains visual contact with the enemy. The platoon does not actively engage the enemy but keeps him under observation only.
- (b) The platoon positions itself between the main body and the area to be screened. A series of observation posts on terrain which permits overlapping fields of observation are established. Areas which cannot be observed from the observation posts are covered by patrols.
- (c) The scout section, rifle squad, and the support squad normally man the observation posts. Tanks may be used on observation posts but are not ideally suited for such a role. All observation posts must be in communication with the platoon leader.
- (d) Without additional communication equipment, the platoon is capable of manning seven observation posts by using the platoon headquarters and the tanks on observation posts. Four observation posts are the ideal number, with the two scout squads, the rifle squad, and the support squad each operating one observation post.

- (c) When the enemy comes under observation, the observation posts maintain visual contact and withdraw by bounds as he approaches. Depending upon the situation, the battle group commander may specify that small enemy patrols be permitted to infiltrate the security screen. Under these conditions, the observation posts remain concealed and continue to observe for larger enemy troop movements. They continue to report all information as it becomes available.

(3) *Maintenance of contact.*

- (a) The reconnaissance platoon may be assigned the mission of maintaining contact with friendly or known enemy units. Physical contact, radio contact, or visual contact may be prescribed.
- (b) In a contact mission, the platoon reports all information as prescribed above for reconnaissance or other type security missions. Contact missions may be assigned in conjunction with reconnaissance or other security missions.
- (c) The techniques employed by the reconnaissance platoon in a contact mission are the same as those prescribed above for reconnaissance or other security missions. The enemy situation, terrain, distances involved, and the actions of the main body are the factors which

determine which technique(s) the platoon leader employs.

- (4) *Rear area security.* The reconnaissance platoon may receive the mission of providing security for the battle group rear area by providing early warning of enemy ground infiltration and airborne or guerilla activities in that area.

Section III. TACTICS OF THE RECONNAISSANCE PLATOON

65. General

The reconnaissance platoon may conduct an attack, a defense, or a delaying action in the accomplishment of its assigned reconnaissance or security mission. The platoon leader determines the best type of action to take consistent with his mission.

66. Actions Upon Contact

When contact with the enemy is made, the platoon follows four distinct steps.

- a. *Deploys.* The vehicles move off the road and take up positions from which they can engage the enemy by fire. The platoon leader immediately reports the enemy contact to the battle group commander.

- b. *Develops the Situation.* The platoon leader proceeds to develop the situation as prescribed in paragraph 63.

- c. *Chooses a Course of Action.* After developing the situation, the platoon leader decides on a course

of action. It may be to attack, delay, maintain contact, or to bypass the enemy position. The decision is based on the following:

- (1) Assigned *mission* of the platoon.
- (2) Immediate *enemy* situation.
- (3) *Terrain*.
- (4) *Troops* available.

d. Reports. The platoon leader makes a complete report to the battle group commander to include the enemy situation as it has been developed and the course of action decided upon.

67. Plan of Attack

a. General. The plan of attack is designed to insure maximum coordination between the elements of the platoon throughout the operation. The plan must be simple but it must include certain essential details. It includes—

- (1) The composition and location of the fire support element, targets to be fired upon, and control measures for lifting or shifting the fires.
- (2) The composition of the maneuvering force, the route it will follow to the objective, and its method of advance (fig. 18).
- (3) Provisions for security during the attack, consolidation of the objective, reorganization, and for resumption of the advance.

b. Maneuvering Force.

- (1) The maneuvering force advances rapidly and fires all its weapons when within effective range of the objective. The fires

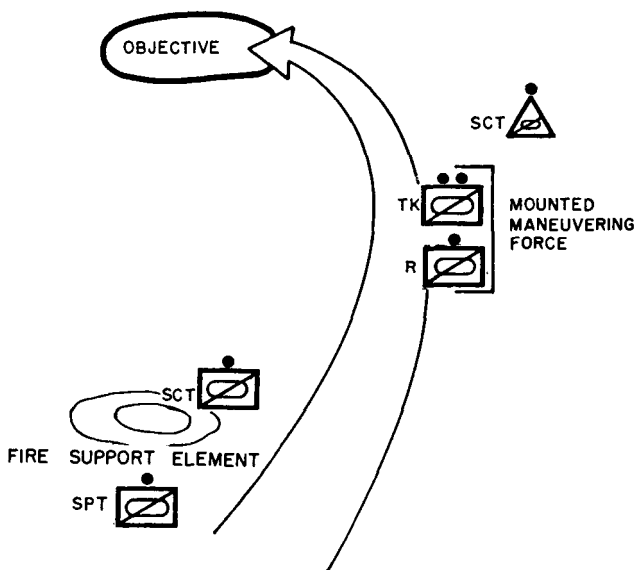


Figure 18①. Attack formation—reconnaissance platoon.

- of the maneuvering force are reinforced by all available supporting fires.
- (2) When tanks are used in the assault, they are normally in a deployed formation.
 - (3) The rifle squad advances in the armored personnel carrier as far as possible, dismounting when forced to by enemy fire or when dismounted action is required. Riflemen mop up enemy personnel not destroyed by the tanks. The rifle squad may advance ahead of the tanks to clear buildings or to locate well-hidden enemy anti-tank weapons. Riflemen designate targets

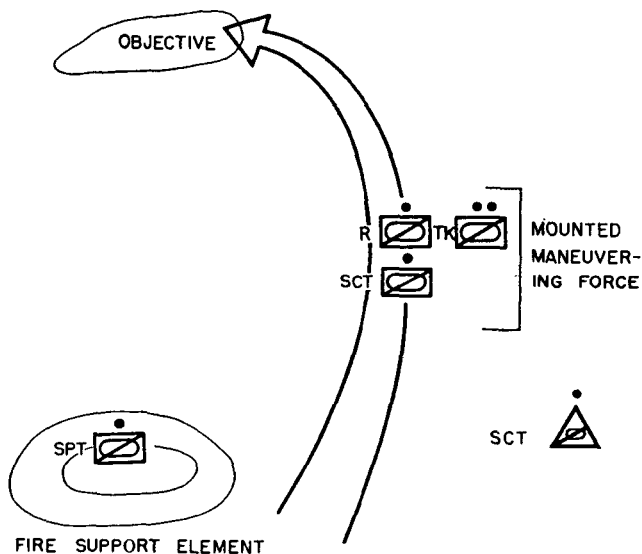


Figure 18②—Continued.

to the tank commanders by the use of pre-arranged signals, radio, the external inter-phone located on the rear of the tank, flares, smoke grenades, or tracers. Whenever possible, a rifleman mounts the tank and points out the target to the tank commander, if he can do so without unduly exposing himself to enemy fire.

c. *Fire Support Element.*

- (1) The fire support element opens fire on order and distributes its fire on known and suspected enemy within the objective area. When the fire is masked by the

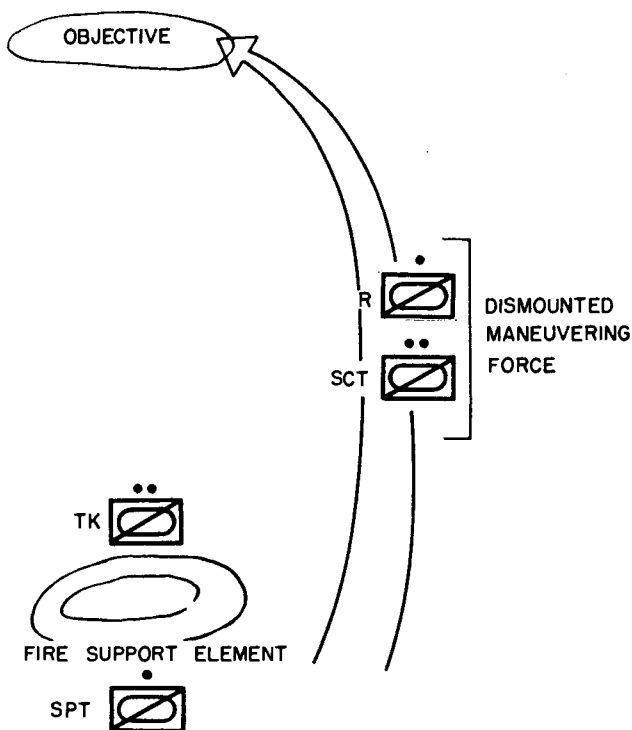


Figure 18③—Continued.

maneuvering force, it is lifted or shifted to the flanks or enemy rear. The fire is controlled by radio, observation, or pre-arranged signals. Tanks and automatic weapons in the fire support element may be moved when necessary to attain better fields of fire or to avoid enemy fire.

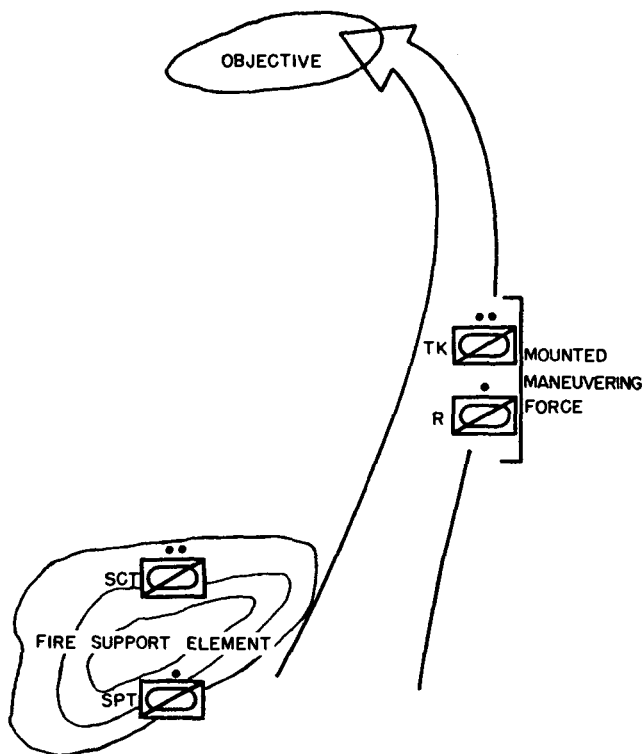


Figure 18④—Continued.

- (2) The maneuvering force must be in position to fire on the objective before the supporting fires are lifted. When the fires of the fire support elements are lifted or shifted, the maneuvering force moves directly onto the objective.

- (3) Direct fire weapons must be prepared to displace forward when their fires are masked. The support squad normally does not displace until the consolidation of the objective is completed.

d. Attack Formations. Several methods of deploying the platoon for the attack are illustrated in figure 18.

e. Action on the Objective. When the objective is taken, it is consolidated and the platoon is reorganized in preparation for future operations. The extent of consolidation and reorganization is dependent upon the mission, the time available, and losses suffered by the platoon. The objective is consolidated using the techniques prescribed for the defense (par. 68).

f. Command and Control. During the attack, the platoon leader may remain with the fire support element or accompany the maneuver force. The platoon sergeant controls those elements not directly under the control of the platoon leader. In such a case, the platoon sergeant may not command the tank section as stated in paragraph 58.

68. Defense

a. General. The reconnaissance platoon operating alone is limited in its ability to conduct a prolonged defense. However, in the conduct of reconnaissance and security missions, it may be required to defend an area for a limited time.

b. Reconnaissance and Selection of Positions. The platoon leader, accompanied by his section and squad leaders, makes a reconnaissance of the area

to be defended. The availability of time determines how extensive the reconnaissance will be. Based on this reconnaissance, the platoon leader formulates his plan.

c. Occupation and Preparation of Positions.

- (1) Security to the front and flanks of the position is provided by establishing observation posts to give early warning of enemy approach. Patrols may be used to cover areas not under observation from the observation posts. The flanks are tied into obstacles whenever possible.
- (2) The platoon leader assigns specific areas of responsibility to the elements of the platoon. He assigns sectors of fire and final protective lines to the machineguns employed on the position (fig. 19).
- (3) The platoon defensive position is organized around the tank section. The tanks are positioned to cover the most dangerous enemy armor approach into the position. Each tank is placed in hull defilade and should be mutually supporting with the other tank.
- (4) The mission of the rifle squad is to provide maximum firepower to the front and flanks. The rifle squad has the additional responsibility of protecting the tanks from tank hunter teams. This is normally done by positioning the rifle squad to cover the most dangerous avenue of enemy foot approach. The rifle squad may be organized

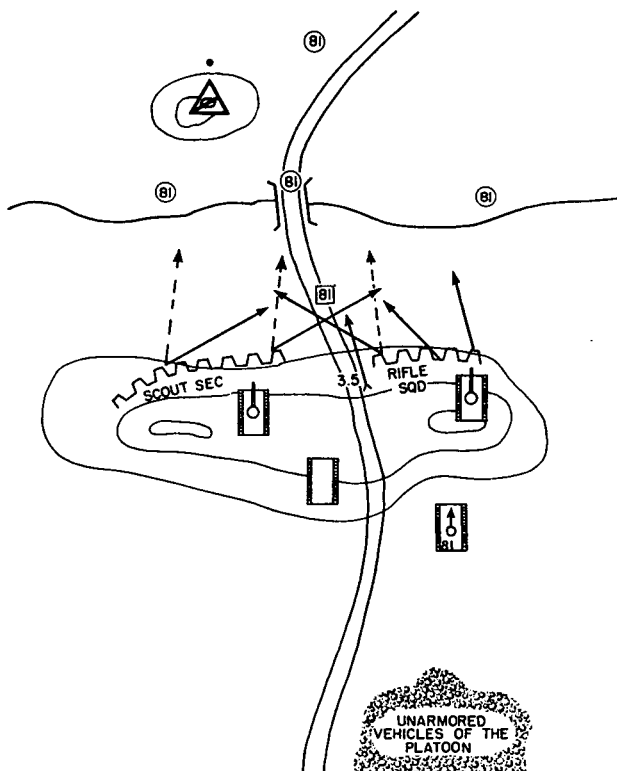


Figure 19. Reconnaissance platoon in defense.

into two automatic weapons teams, one equipped with the light machinegun, and one with the two automatic rifles. These teams should be mutually supporting.

- (5) The primary mission of the scout section is to provide security for the platoon. Personnel of the section man observation

posts and patrol to accomplish this mission. A portion of the scout section may remain in the defensive position and be employed as riflemen. The platoon leader normally prescribes the location of the observation posts. The observation posts report the location, strength, disposition, and movement of the enemy, and adjust long range fire on the enemy. When enemy action forces the observation posts and patrols to be withdrawn into the defensive position, the personnel of the scout section occupy previously prepared positions.

- (6) The support squad provides indirect fire support. It is normally located to the rear of the position and is responsible for rear security. Whenever possible, the mortar is fired from the carrier.
- (7) The platoon's $\frac{1}{4}$ -ton trucks, when not employed on security missions, are located to the rear where they are protected from direct fires delivered on the defensive position.

d. Fire Planning. Firepower is the platoon leader's means of stopping the enemy forward of the defensive position. Fire planning includes the coordination of all available fires which can be brought to bear on the enemy. The fire plan is designed to bring the enemy under fire at maximum range and subject him to an ever-increasing volume of fire as he approaches the defensive positions.

e. Conduct of the Defense. The enemy approach is detected as far forward of the defensive position as possible. Personnel on the observation posts adjust long range fires on the enemy as he comes within range. As the enemy approaches the defensive position, he is brought under fire. Each weapon takes the enemy under fire as he comes within range. If the enemy envelopes the flanks of the position or succeeds in penetrating it, supplementary positions are occupied.

69. Delaying Action

a. General. The platoon frequently conducts delaying actions in the accomplishments of a reconnaissance or security mission. The action is conducted on a series of delaying positions organized in depth (fig. 20).

b. Selection of Delaying Positions. Whenever possible, the delaying positions should be on commanding terrain, using the topographical crest. It should have good observation and fields of fire, cover and concealment, obstacles to both front and flanks, and routes of withdrawal. The platoon leader reconnoiters the initial delaying position and sends the platoon sergeant to reconnoiter each succeeding position. The platoon sergeant uses the platoon leader's $\frac{1}{4}$ -ton truck, driver, and one or more men from the rifle squad.

c. Organization of the Position. A delaying position is organized in generally the same manner as prescribed for the defense except that the scout section mans observation posts to the front and the

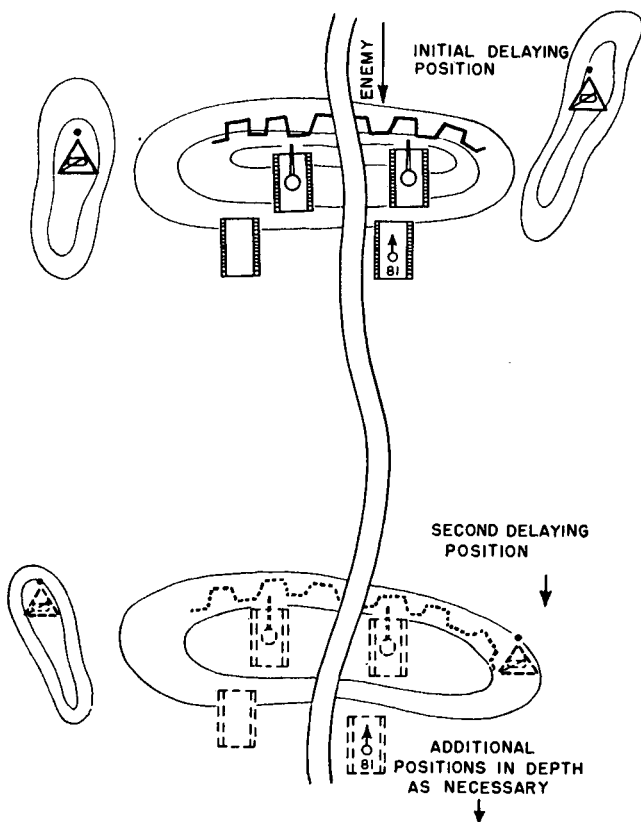


Figure 20. Delaying positions prepared in depth.

flanks (par. 68). The platoon is positioned on commanding terrain which covers one likely avenue of enemy approach, preferably with only one road leading into the position. The platoon leader normally operates from the platoon sergeant's tank or the rifle squad's armored personnel carrier, but he

may be anywhere on the position from which he can best control the action. Preparation of the position begins as soon as the platoon arrives in the area and continues as long as time permits. Upon occupation of each delaying position, immediate steps are taken to provide security to the front and flanks.

d. Conduct. The action on the delaying position is similar to that prescribed for the defense (par. 68), except that the platoon does not engage the enemy in close combat. When the position is in danger of being overrun, or at a specified time, the platoon withdraws to the next delaying position.

e. Withdrawal to Subsequent Positions. The reconnaissance platoon holds each delaying position until forced to withdraw by enemy action or to conform with orders from the battle group commander. In either case, the platoon must have prior permission to withdraw. If the platoon is forced to withdraw by enemy action, the platoon leader must inform the battle group commander in sufficient time to obtain authority to withdraw before becoming decisively engaged. He must keep the battle group commander informed as the situation progresses so that the battle group commander has detailed knowledge of the situation and can make a quick decision. The platoon may withdraw from the delaying position as a unit or by squads and sections. In either case, the withdrawal is accomplished as follows:

- (1) *Platoon leader.* The platoon leader normally withdraws with the last element to leave the position.

- (2) *Tank section.* Normally, the tank section withdraws as the last element of the platoon. If the terrain is heavily wooded, or observation is otherwise restricted, the rifle squad will cover the withdrawal of the tank section.
- (3) *Rifle squad.* When the terrain provides good observation, the rifle squad normally withdraws before the tank section.
- (4) *Support squad.* The support squad is withdrawn after maximum assistance has been given the withdrawal of other elements of the platoon. It normally withdraws approximately at the same time as the rifle squad.
- (5) *Scout section.* The scout section *is not* considered in the order of withdrawal of the platoon. The section leader, under the direction of the platoon leader, controls the withdrawal of the scout squads. He withdraws the scout squads on the flanks so that at least one squad has visual contact with the enemy at all times.

Section IV. BATTLE GROUP TACTICS AS APPLIED TO THE RECONNAISSANCE PLATOON

70. Movement to Contact

a. During the movement to contact, the reconnaissance platoon may reconnoiter routes over which the battle group will advance, and can assist in traffic control. It may reconnoiter assembly areas

and attack positions as well as provide security while the battle group occupies these positions.

b. When there are no friendly forces to the front and the enemy situation is vague, the platoon conducts security patrolling to the front. However, if the battle group commander has reason to be more concerned about a flank, the platoon may patrol on that flank.

c. When there are friendly forces to the front, the platoon may conduct security patrolling on the most dangerous flank. In the event the friendly forces are operating far to the front, the platoon may be assigned the mission of maintaining contact with these forces. The platoon may also be given the mission of maintaining contact between elements of the battle group, if it is moving on multiple routes or axes, or with other friendly units operating on the flanks.

d. When in the performance of any of the above missions the platoon makes contact with the enemy, the platoon leader selects a course of action. He may elect to attack the enemy, to conduct a defense or delaying action if the enemy force is moving toward the main body, or to keep the enemy force under observation if it represents no immediate threat to the main body. The battle group commander must be kept thoroughly informed of all enemy encountered and the actions taken by the reconnaissance platoon.

71. Attack of Initial Objectives

The reconnaissance platoon does not normally operate forward of the battle group in the attack,

but is assigned a security patrol mission on the most dangerous flank. The platoon may also be given the mission of maintaining contact with adjacent units.

72. Action Within the Enemy Position

a. When, after seizure of the objectives, the battle group immediately resumes the attack toward a deep objective, the reconnaissance platoon normally functions as in the movement to contact (par. 70).

b. When the battle group consolidates the objective prior to the continuation of the attack, the platoon may reconnoiter beyond the objective and maintain contact with the enemy, conduct security patrolling to the front or flanks, or maintain contact with adjacent units.

c. When atomic weapons are used by either friendly or enemy forces, the reconnaissance platoon may receive the mission of reconnoitering the area of detonation to determine the amount of damage and/or contamination in the area. Engineer personnel may be attached to the reconnaissance platoon for such a mission.

73. Pursuit

If the enemy resistance collapses, a pursuit may be ordered. When the battle group is engaged in the pursuit, the reconnaissance platoon functions generally as prescribed for the movement to contact (par. 70). Every effort is made to gain and maintain contact with the withdrawing enemy.

74. Task Force Operations

Because of the areas over which the battle group operates and the fluid warfare contemplated under atomic conditions, the battle group commander will have frequent occasions to send out small unit task forces. The reconnaissance platoon may be attached to a task force or may provide a nucleus around which a task force can be built.

75. The Defense—General

a. The battle group normally defends as part of the division. It may, however, defend an isolated position beyond the division's supporting range. The battle group may participate in a position defense or a mobile defense.

b. In either of the types of defense and when a general outpost is established, the reconnaissance platoon normally operates between the general outpost and the next security echelon to the rear. The platoon maintains contact with the general outpost. While accomplishing the above, the platoon reconnoiters the roads and trails in the area and establishes temporary observation posts to observe particular areas. It also reconnoiters for likely enemy approaches, possible locations of future enemy assembly areas and weapon positions, and recommends locations for concentrations as part of the long range defensive fires. The platoon is capable of performing a combination of these missions simultaneously. Upon the withdrawal of the COPL, the reconnaissance platoon may be attached to one of the forward companies for use on the COPL, or

it may be attached to the unit from the battle group reserve manning the COPL.

c. Upon withdrawal of the security elements into the battle position, the reconnaissance platoon may operate battle group OP's within the position, maintain contact with adjacent units, conduct security patrolling on an exposed flank, perform reconnaissance throughout the battle group rear, or become part of the battle group reserve. The ability of the platoon to perform more than one of these missions simultaneously is limited.

d. When there are no friendly forces operating forward of the battle group, the reconnaissance platoon may conduct a screening mission to the front, maintaining visual contact with the enemy as he approaches.

e. The reconnaissance platoon of a reserve battle group normally performs reconnaissance and security missions throughout the battle group area of responsibility. When the reserve battle group is committed to the counterattack, the reconnaissance platoon functions as prescribed for the attack (par. 67).

76. Retrograde

When the battle group is conducting a withdrawal or a delaying action, the reconnaissance platoon functions as prescribed for the defense. Under some conditions, the platoon may be attached to the covering force; however, the platoon normally operates under battle group control.

CHAPTER 4

COUNTERFIRE SQUAD

Section I. GENERAL

77. Organization

The counterfire squad consists of a squad leader (chief operator), a counterfire specialist (operator), two computers, and two plotters. The squad is divided for sound locating operations into two teams. The chief operator, one computer, and one plotter are in one team. The operator, one computer, and one plotter are in the other team. The battle group S2 supervises the operations and training of the counterfire squad.

78. Duties of Personnel

a. The Squad Leader's Duties Include—

- (1) Acting as operator in the control team and as chief operator for the squad.
- (2) Seeing that accurate data are reported promptly to the appropriate agency as sound locating reports.

b. The Counterfire Specialist's Duties Include—

- (1) Acting as second in command of the squad.
- (2) Acting as operator of the second team.
- (3) Seeing that accurate data are reported properly to the computer of the control team.

c. Each Computer's Duties Include—

- (1) Assisting the squad leader or the counterfire specialist in transporting, installing, and surveying the equipment.
- (2) Computing the azimuth to the targets by using data obtained from the recorder.
- (3) Recording data on the data sheet.
- (4) Acting as a radiotelephone operator.
- (5) The computer at the remote team gives data to the computer at the control team. The computer at the control team gives the data from both teams to the control team plotter.

d. Each Plotter's Duties Include—

- (1) Assisting the squad leader or the counterfire specialist in transporting, installing, and surveying the equipment.
- (2) Plotting the data from both teams and reporting it to the counterfire information center when his team is the control team.
- (3) Acting as a radiotelephone operator or as a driver.

79. Armament, Equipment, Maintenance, and Supply

Personnel of the counterfire squad are armed with four carbines and two rifles. The squad has a 1/4-ton truck and trailer. The squad has a sound ranging set consisting of two microphone arrays of three microphones connected by an electrical cable to a recorder, sound-powered telephone sets, computers, aiming circles, plotting boards, power unit (battery), and portable pack radiotelephones.

Maintenance equipment for the sound ranging sets is in the communication platoon headquarters. The battle group radio repairmen maintain the sound ranging equipment for the counterfire squad. The company headquarters maintains all other organizational equipment and individual weapons, and it usually performs all resupply. However, when the counterfire squad is located nearer to the supply facilities of another unit for an extended period, the headquarters company commander may arrange for items that are expended continuously, such as ammunition, rations, water, fuel, and clothing to be supplied by the appropriate company or battery of the battle group.

80. Counterfire, Countermortar, and Counterbattery

a. Infantry counterbore operations include all measures initiated by the infantry to attack enemy close support weapons by fire. These include countermortar activities (FM 6-20), as well as activities against other enemy close support weapons, including direct fire weapons. Infantry counterfire operations and artillery countermortar activities are coordinated by the battle group S3 and the mortar battery commander.

b. Division countermortar activities include all infantry and artillery countermortar activities within the division. Artillery countermortar activities are measures taken by the artillery to attack enemy mortars and rocket launchers. Overall coordination of division countermortar activities is the responsibility of the division artillery commander. Thus, the artillery commander coordinates

countermortar activities of the artillery, plus those infantry counterfire operations that are directed against enemy mortars and rocket launchers (indirect fire weapons). He does not coordinate other infantry counterfire operations against enemy direct fire weapons. However, the infantry may request artillery fire to neutralize enemy direct fire weapons (FM 6-20).

c. Artillery counterbattery operations differ from countermortar and counterfire operations by being directed exclusively against enemy artillery.

81. Battle Group Counterfire Information

a. Counterfire information includes all information which contributes to the accurate location of enemy close support weapons. It is the basis for effective counterfire operations.

b. The battle group S2 has staff responsibility for collecting, evaluating, and disseminating counterfire information. This information is assembled and evaluated by the counterfire operations sergeant, who may work in the mortar battery fire direction center.

c. The counterfire operations sergeant informs the fire direction officer whenever counterfire information indicates the location of a counterfire target. He keeps the S2 informed of this information and any other information which he acquires from the intelligence sergeant of the mortar battery.

d. The counterfire center is established and operated by the counterfire operations sergeant. The counterfire center may be located in the mortar bat-

tery FDC or in the S2 section at the battle group C.P.

82. Battle Group Counterfire Operations

a. The counterfire squad furnishes information to help supporting weapons gain fire superiority over the enemy's close support weapons.

b. The effectiveness of counterfire operations depends upon the speed and flexibility with which the most appropriate counterfire weapon is selected to engage each counterfire target. Speed and flexibility depend on rapidly obtaining information in the fire direction center. Information of the number, type, and disposition of enemy weapons must be timely, accurate, and complete to be of value in battle group counterfire operations.

c. The counterfire squad may be attached to the mortar battery for conducting sound location operations. When this is done, the squad reports information directly to the counterfire operations sergeant in the FDC. This assures the greatest flexibility and effectiveness of battle group counterfire operations. If the squad cannot establish communications directly with the counterfire operations sergeant, it submits data to the nearest mortar forward observer. The forward observer forwards it directly to the FDC, where the counterfire operations sergeant processes it. For normal counterfire information wire and radio circuits, see figures 21 and 22.

d. Operations may be decentralized when frequent displacement is necessary, when it is impossible to survey the counterfire squad location, or

when inadequate communication prevents sound locating operations from being conducted effectively under battery control. Under attachment, the counterfire squad is attached to a forward company, or to firing platoons. In such a situation the counterfire squad reports counterfire information directly, either to the platoon fire direction center or to selected counterfire weapons. The techniques used

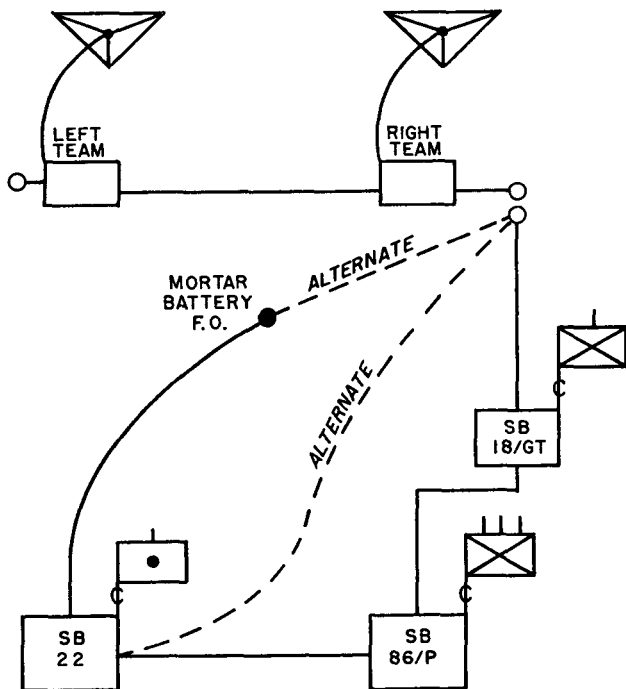
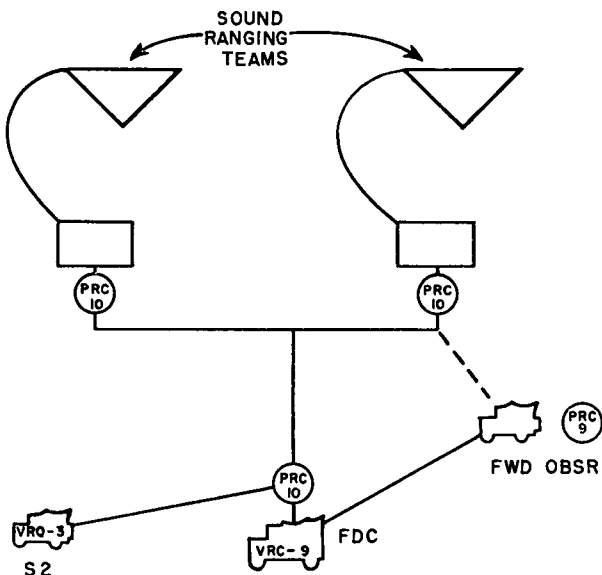


Figure 21. Counterfire information wire circuits.

when the counterfire squad operates in close association or immediate association with counterfire weapons are covered in detail in paragraphs 87 through 95.

83. Counterfire Information Agencies

All men in the battle group are trained to report counterfire information. Agencies organic to the



NOTE:

WHEN SQUAD CONTROLS RECORDERS BY RADIO, THE AN/PRC-10 NOW SHOWN AT FDC WILL NOT BE AVAILABLE.

Figure 22. Counterfire information radio circuits.

battle group include the counterfire squad, the mortar battery, the reconnaissance platoon, the assault gun platoon, the rifle companies, and other battle group units in a position to obtain shelling reports. Other agencies include the mortar battery liaison officer, air observers, photo-interpretation specialists, prisoner of war interrogation specialists, attached and supporting units, and higher headquarters.

84. Infantry Counterfire Weapons

a. Any infantry weapon that can destroy or neutralize enemy close support weapons by firing on them may be an infantry counterfire weapon. The mortar of the mortar battery is the principal counterfire weapon in the battle group.

b. Counterfire missions include precision fire and area fire. To execute these missions without adjustment requires accurate target data. Lacking accurate target data when helping an infantry counterfire weapon to adjust fire, a counterfire squad furnishes approximate target data initially, then computes the difference between the target and the shell burst locations and reports range and deflection corrections on weapon to target range and azimuth to the counterfire weapon.

c. The infantry counterfire weapons can use, and the counterfire squads can furnish, accurate target data only when their own positions are surveyed. When these surveys are not practicable, the counterfire squads may assist the counterfire weapons to engage unobserved targets by the *rapid method of fire adjustment*. The rapid method of fire adjustment is covered in paragraph 94.

d. Artillery counterfire missions may be requested by frontline units through the mortar battery liaison officer or forward observers.

85. Records and Reports

a. The counterfire operations sergeant keeps a counterfire information form (fig. 23), and a counterfire chart with a shelling report overlay and a suspect overlay (fig. 24). The counterfire chart is a map, preferably with a scale of 1:25,000, mounted on a map board and covered with acetate. Two sheets of acetate are fastened to opposite sides of the board so that they can be placed individually or together over the map. One of these sheets of acetate is the shelling report overlay and the other is the suspect overlay. The Counterfire Information Form (fig. 23) may be reproduced locally under the provisions of paragraph 20a, AR310-1).

b. All shelling reports (FM 6-20) and sound locating reports are recorded first on the counterfire information form. Then the shelling report overlay is placed next to the counterfire chart and a ray is plotted from the point of origin of the shellrep along the reported azimuth. Along the ray itself is written the time a particular weapon was reported active, the number of weapons firing, estimated caliber, and the number of the shelling report from which the information was plotted. Depending upon the accuracy of the shelling report, the ray now plotted is a line of indefinite length, with the enemy weapon located somewhere along the line. If the distance to the weapon was reported, it is also entered. Intersection of two or more rays of

SHELLREP NUMBER	A	B	C	D	E	F	G	H	I	J	K.
	REPORTED BY&TIME	POSITION OF OBSERVER (MAP COORDI- NATES)	AZIMUTH OF BOUND FLASH, OR FURROW	TIME FROM	TIME TO	AREA SHELLED	NUMBER & TYPE OF GUNS	NATURE OF FIRE	NUMBER & TYPE OF SHELLS	FLASH- BANG SECONDS	DAMAGE (REMARKS)
1	WHITE OP 0710	970859	5690M FL	0650	0700	967853	1 SP	HARASS	6 HE	4 SEC	
2	CO, CO B 0715	949835	6200M CRAT ANWL	0700	0710	949835	M/MORT	HARASS	12 HE		3 KIA 1 TRK DESTROYED AT 949834
3	REGT OP #1 0718	960847	380 M SND	0710	0715		2 ^H /MORT		10 HE		

Figure 23. Counterfire information form. (Reproduced locally under the provisions of paragraph 20a, AR 310-1).

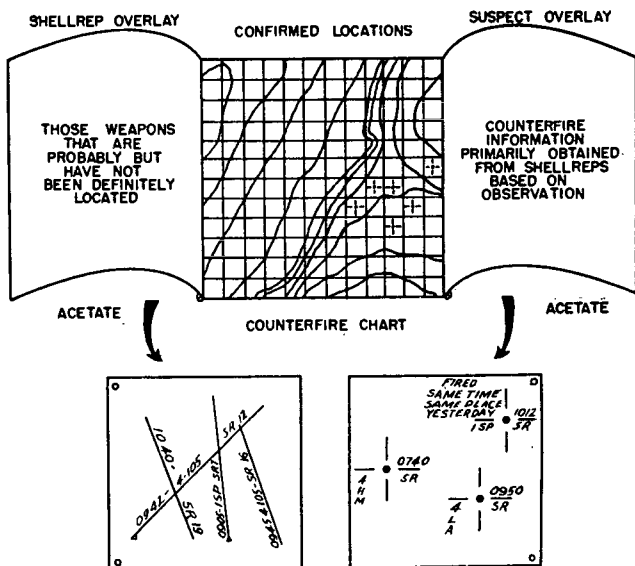


Figure 24. Counterfire chart.

the same estimated caliber that were active at approximately the same time will indicate the general location of the firing weapon. Locations determined by this method or by a single ray with an estimated distance to the weapons are evaluated to determine if the enemy weapons could logically be there. Additional plots are needed if the weapon location falls in a lake, river, or other similar type area.

c. If the location is logical, it is then plotted on the suspect overlay by means of a hollow cross with a dot in the center denoting the exact location of the weapon. The time the weapon was active, the

source, and the reported number and caliber are added. By using different colors for the crosses, the estimated accuracy of these suspect locations can also be shown graphically.

d. When each suspect location is confirmed by additional reports or other means, it becomes a counterfire target and is transferred to the counterfire chart. When shelling reports and sound or radar locations are received, the counterfire chart should be consulted immediately to ascertain if the active weapons have been previously located. Data of accurately located enemy weapons are reported immediately to the fire direction officer for use in counterfire missions.

86. Training

The counterfire operations sergeant assists the S2 in the conduct of battle group counterfire information training. This training includes recognizing, evaluating, recording, and reporting counterfire information. During advanced unit training, arrangements are made for the counterfire squad to train with the mortar battery and rifle companies so that they become proficient in operating together; then the squad takes part in battle group exercises. During combined and joint training, counterfire information is coordinated with the division artillery. In tactical exercises enemy weapons are simulated so that the counterfire squad and other agencies get realistic practice in collecting counterfire information.

Section II. TECHNIQUE

87. Technique and Theory of Sound Locating Equipment

a. Sound locating is one means of getting accurate counterfire information. For a diagram of the sound locating equipment of one team, see figure 25. The sound locating equipment is accurate and is made for normal use in the field. However, carelessness and rough handling reduce its accuracy and shorten its operational life. Accuracy also is decreased by human error. Accurate results come from a knowledge of equipment capabilities, care and maintenance of equipment, selection of good operating locations, training, and practice. Much of the technique of surveying and sound locating requires a knowledge of measuring and plotting magnetic azimuths on a map or map substitute. For this reason, the men of the counterfire squad are trained in map reading and surveying before they learn sound locating technique.

b. Sound locating is finding the location of a sound source. There are two methods—one method uses two sound locating teams while the other uses only one sound locating team. When only one team is used, it computes one azimuth by sound direction finding, and it computes distance by sound ranging. When two teams are used, each team computes an azimuth to the sound source by sound direction finding. Both azimuths are then plotted, and their intersection is the location of the sound source. Sound direction finding and sound ranging are described in *c* and *d*, below.

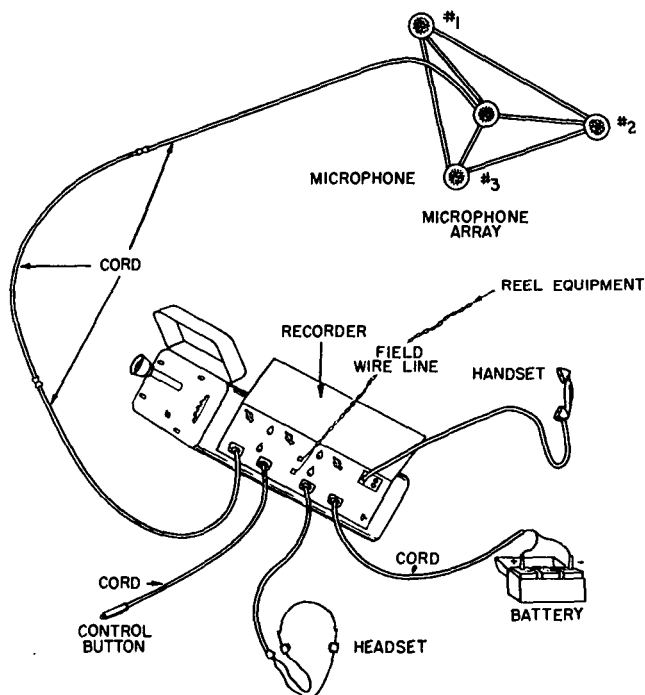


Figure 25. Counterfire team sound ranging equipment.

c. Sound direction finding is computing the magnetic azimuth from a point to the source of a sound. Sound waves travel in all directions away from their source, like the waves caused by a stone dropped into a pond. This sound is received by all three microphones of the team and transmitted to the recorder. It does not reach all three microphones at the same instant, so it is recorded as three sounds on a moving magnetic steel tape. The time

differences between the sounds recorded on the tape are used by the computer to determine the magnetic azimuth from the No. 3 microphone to the sound source. Since sound direction finding from one team gives only the magnetic azimuth and not the distance to the sound source, to locate the sound, it is also necessary to find either the magnetic azimuth from another location or the distance to the sound source by some other means (fig. 26).

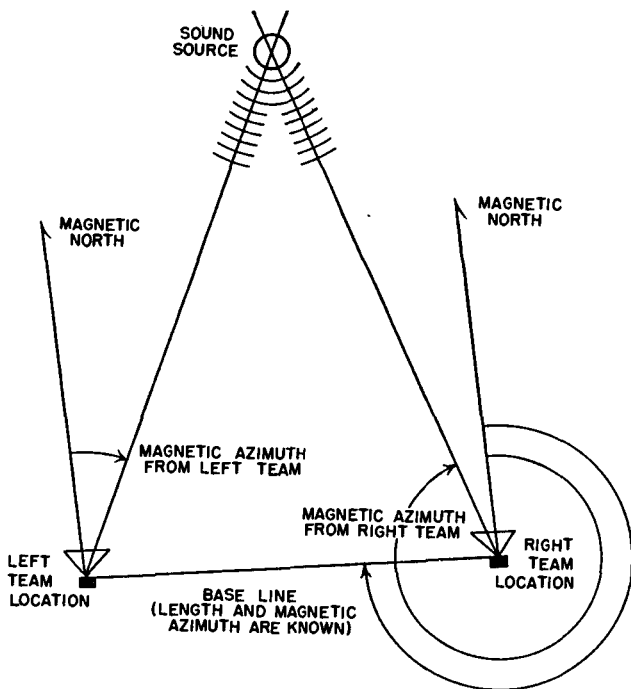


Figure 26. Sound direction finding from two or more teams.

d. Sound ranging is finding the distance from a point to the source of a sound. A sound received by a telephone located at the sound source, transmitted almost instantaneously by electricity to the recorder, and recorded on the recorder's moving tape. The same sound, which takes longer to travel by air to the team location, is received by the No. 3 microphone and recorded on the moving tape. The time difference between the sound recorded by the telephone and the sound recorded by the No. 3 microphone is used to compute the distance from the No. 3 microphone to the sound source. This method is not used to measure the distance to an enemy weapon, an area under enemy control, or to any other location where a field telephone wire line cannot be laid. This method may be used to measure the length of the baseline, the distance to a counterfire weapon position, or the distance to a reference point that is not under enemy control and can be reached by telephone wire line (fig. 27).

88. Selecting Sound Locating Positions

a. The mortar battery commander may select the approximate team locations for the counterfire squad. The squad leader then reports the location of each team to the counterfire operations sergeant after his squad has surveyed or estimated its position.

b. The team positions are as near to the enemy as tactically possible. High, open, even ground is the best location for the microphones. Locations within dense woods or near high hills are avoided because vegetation and irregularities in the ground

absorb or reflect sound waves, and cause echoes. Concealment and defilade nearby give the men of the team protection from enemy observation and fire.

c. The baseline is a surveyed or estimated line from the No. 3 microphone of one team to the No. 3 microphone of the other team. The magnetic azimuth of the baseline is measured from the control team, or computed from the back azimuth from the other team.

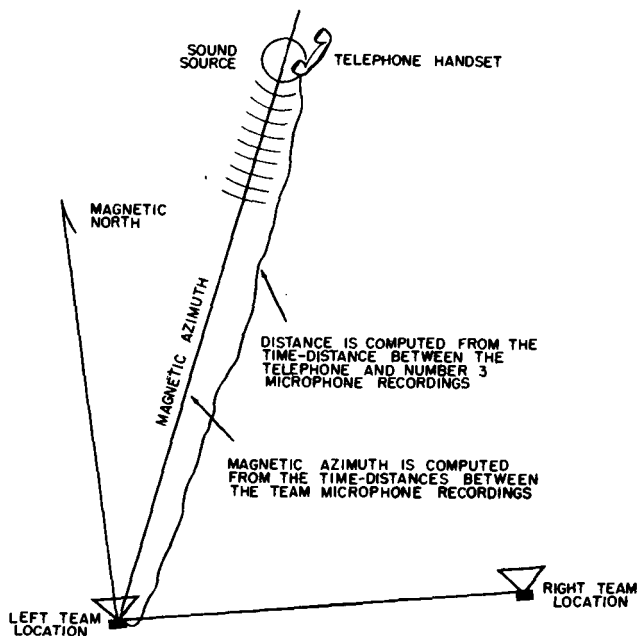


Figure 27. Sound direction finding and ranging from one team.

d. Normal sound locating range to enemy close support weapons usually is 2,000 to 4,000 yards. The best length for the baseline is approximately one-third the distance to targets at normal sound locating range, or about 700 yards. A shorter baseline causes significant errors in plotting the location of counterfire targets.

e. When both recorders are controlled by the operator at the control team, a baseline longer than 740 yards will have dead spaces near and beyond each end. These dead spaces are areas where enemy weapons cannot be sound located. They are caused by sound waves from the flanks being recorded and erased at the recorder near the sound source, before they arrive at the more distant recorder. Sound recordings remain on the moving tape only two seconds before they are erased to clear the tape for new sounds, unless the erasing head is made inoperative. Sound travels by air at a speed of about 370 yards per second under average temperature and humidity conditions at sea level. The counters on the recorder are calibrated to this speed.

89. Installing Sound Locating Equipment

a. Each team installs a microphone array of three microphones connected by electrical cable to a recorder. The team on the right, when facing toward the enemy, is the right team and usually is the control team. The other team is the left team. The control team has a field telephone wire line either to the mortar battery FDC or to the nearest switchboard in the battle group wire system. When

a counterfire squad is attached to a firing platoon, the control team has a field telephone wire line to the platoon position or fire direction center. The other team installs a field wire line from its recorder to the recorder at the control team. This line permits both recorders to be stopped by remote control at the control team, and it permits the two teams to communicate with each other by telephone. The two teams also have radiotelephone communication with each other and with the mortar battery FDC or counterfire weapon.

b. Each member of each team has assigned tasks in installing the sound locating equipment. Most of the same activities are performed by corresponding men of both teams. The following list is a summary of the detailed functions of each member of the squad when installing sound locating equipment:

- (1) The squad leader's duties include—
 - (a) Leading the squad to its position.
 - (b) Selecting the locations for both teams.
 - (c) Supervising the installation of equipment by both teams.
 - (d) As chief operator, selecting the exact location for the right (control) team.
 - (e) Carrying the recorder and two battery boxes, Ch-291.
 - (f) Indicating the exact location of the No. 3 microphone of his team to the computer.
 - (g) Locating the No. 1 microphone to the left front and the No. 2 microphone to the right front of the No. 3 microphone.

- (h) Tightening the chains spacing the microphones and staking the microphones into the ground.
- (i) Connecting the battery to the recorder and turning on the power.
- (j) Measuring the magnetic azimuth of the line from microphone No. 3 to microphone No. 1 by compass or aiming circle and telling the computer (fig. 28).
- (k) Connecting the cable from the microphones to the recorder.

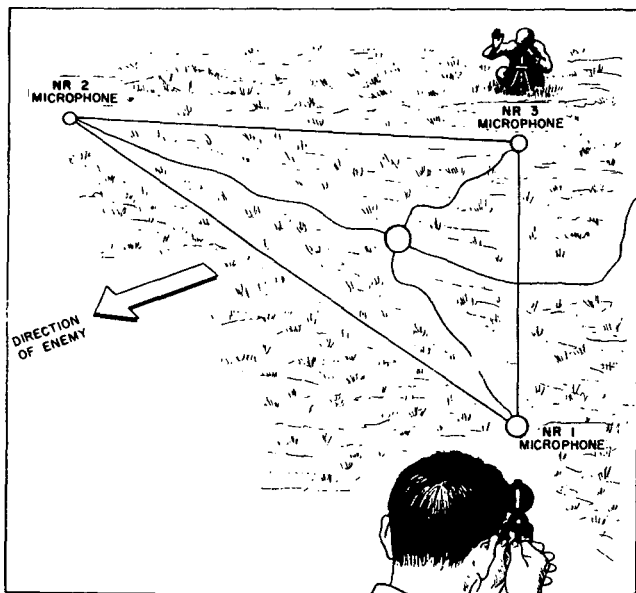


Figure 28. The operator measures the azimuth of the 3-1 line by compass or aiming circle.

- (l) Checking the microphones, the remote control operation, the sound-power telephone, and the portable pack radio-telephone.
 - (m) Contacting the operator at the left team when the equipment is installed.
- (2) The counterfire specialist's duties at the left team are similar to the squad leader's functions at the right team.
- (3) Each computer's duties include—
- (a) Carrying the accessory chest and one bag containing the microphones and cable of the team.
 - (b) Arranging the microphones to zero the counters on the recorder.
 - (c) Laying out the cable from microphone No. 3.
 - (d) Laying out the microphone array on the ground in its approximate position.
 - (e) Staking the No. 3 microphone in the ground at the spot indicated by the operator.
 - (f) Assisting the operator to install microphones No. 1 and No. 2, and to tighten the chains.
 - (g) Recording the magnetic azimuth of the 3-1 line and the location of microphone No. 3.
 - (h) Placing covers on the microphones.
 - (i) Setting the magnetic azimuth of the 3-1 line on the computer.
 - (j) Helping the plotter dig a shelter for and emplace the recorder.

(4) Each plotter's duties include—

- (a) Carrying the AN/PRC-10 radio, a spare battery, and CE-11 reel equipment.
- (b) Installing a wire line for communication to the mortar battery FDC or counterfire weapon. (The control team plotter lays a field telephone wire line either to the battle group switchboard, the nearest switchboard, or to a counterfire weapon. When a counterfire squad is furnishing data directly to a counterfire weapon, he paces and records the distance to the weapon position. The other team plotter installs a field wire line from his team to the recorder at the control team. He leaves enough slack to reach the No. 3 microphone at his team. He paces the distance between teams so the length of the baseline can be estimated.)
- (c) Digging a shelter for and emplacing the recorder.

90. Orienting the Counterfire Squad Position

a. The counterfire squad orients its position as soon as its sound locating equipment is installed. This includes finding the location, length, and direction of the baseline. There are two methods of orienting the counterfire squad position. The most rapid method is by inspecting a map or map substitute and estimating the team locations on the

ground. The most accurate method is by surveying the No. 3 microphone locations on the ground.

b. Inspection and estimation is used only when it is impossible for the counterfire squad to make a survey. In this method, the counterfire squad plots the approximate location of each team and the baseline on a map or map substitute. It measures the length of the plotted baseline by using the scale of the map or map substitute. It measures the magnetic azimuth of the plotted baseline with a protractor. A counterfire squad that is oriented by inspection and estimation only cannot furnish accurate target data for counterfire weapons. It can assist counterfire weapons in the rapid method of fire adjustment.

c. The counterfire squad surveys as soon as the situation permits. A counterfire squad that is oriented by survey can furnish accurate target data for any counterfire weapons whose locations also are surveyed. The counterfire squad is equipped to survey by visual methods and by sound locating methods. To survey by visual methods, each team locates its position by resection (fig. 29). When making a sound survey, they use either sound direction finding and resection or sound direction finding and sound ranging. Survey also is possible by a combination of visual direction finding and sound locating methods. The counterfire squad is not equipped to make a survey by running a traverse, because it does not have conventional equipment for measuring distance on the ground.

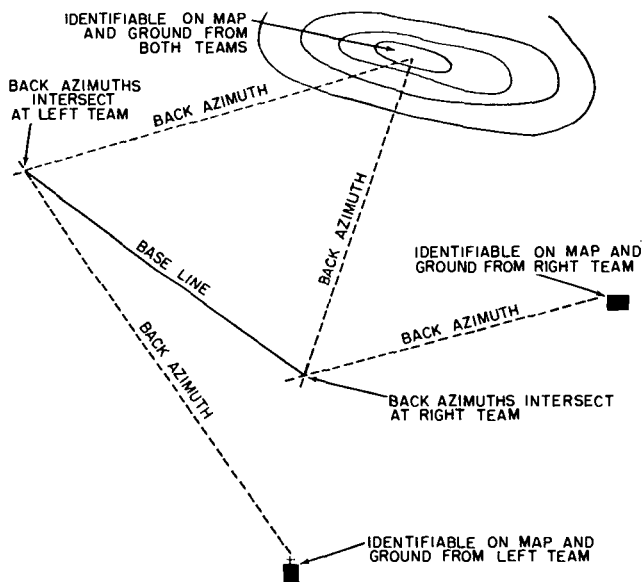


Figure 29. Resection method of surveying the baseline.

d. The counterfire squad surveys its own position and reports the exact location of the control team to the counterfire operations sergeant. It normally is not responsible for surveying counterfire weapons positions. However, when the counterfire squad is in close association with counterfire weapons, it may survey one or more counterfire weapon positions. The counterfire squad may survey a counterfire weapon position either by sound direction finding from two teams, or by sound direction finding and sound ranging from one team. When the counterfire squad furnishes

data directly to a counterfire weapon, it is not necessary to survey.

91. Surveying the Baseline by Sound Locating

a. General. When the counterfire squad cannot survey the baseline by visual resection, it surveys by sound locating or by a combination of visual direction finding and sound ranging. First, the squad finds the length and magnetic azimuth of the baseline, and it then determines the distance and magnetic azimuth to a reference point.

- (1) Length and magnetic azimuth of the baseline. The survey switch on both recorders is placed in the survey position, the power switch on the distant recorder is turned to the off position, and the telephone handset is removed from *both* recorders. A weapon is fired close to the No. 3 microphone of the remote team, and the sound of the shot is transmitted by wire to the recorder at the surveying team. The same sound, after traveling through the air, is received again a moment later by the microphones at the surveying team. The time differences between the recorded sounds are measured on the recorder and used to compute the length and azimuth of the baseline (par. 87). The telephone handsets are reconnected. When one team has measured the length and magnetic azimuth of the baseline, the other team may check the results in a similar manner.

- (2) Location of the baseline. After the length and magnetic azimuth of the baseline are measured, the squad finds the location of one team with respect to a reference point on the ground. If the reference point is not visible from either team, the distance and magnetic azimuth to the reference point are measured by sound locating. If both teams participate in this part of the survey, each team finds the magnetic azimuth to the sound of a shot originating at the reference point. If only one team participates in this part of the survey, it uses sound direction finding and sound ranging to find the magnetic azimuth and the distance to the sound of a shot originating at the reference point. Both teams may have to be used to measure the magnetic azimuth to a distance reference point (sound direction finding) when a telephone wire line cannot be laid to it. When a reference point is near one team, only the nearest team measures the magnetic azimuth and the distance to the reference point (sound direction finding and sound ranging) (fig. 30).

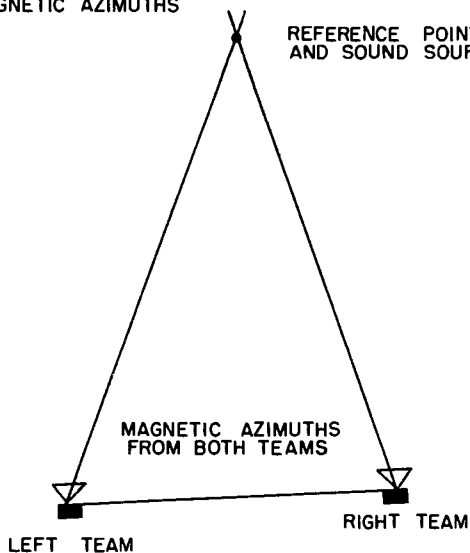
b. Duties of Squad Members.

- (1) The squad leader supervises sound locating by both teams in his squad and conducts the sound locating at the control team. During the survey of the

A DISTANT REFERENCE POINT

INTERSECTION OF
MAGNETIC AZIMUTHS

REFERENCE POINT
AND SOUND SOURCE



A NEARBY REFERENCE POINT

TELEPHONE HANDSET

REFERENCE POINT
AND SOUND SOURCE

DISTANCE AND MAGNETIC
AZIMUTH FROM ONE TEAM

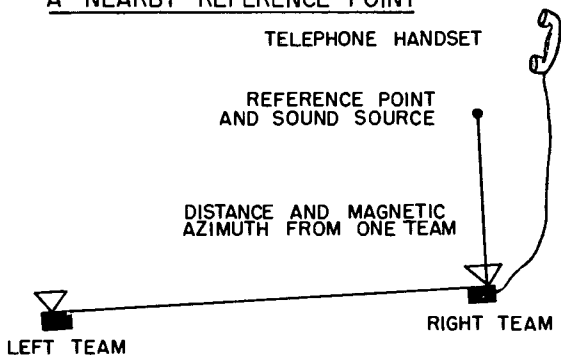


Figure 30. Surveying by sound locating on unobserved reference point.

baseline, he sets the control on the recorder at the control team; gives the command for the other team to fire a weapon; stops the recorder, checks the recording; sets the recorder controls for manual operation; makes measurements on the recorder; and decides when the survey is completed at the control team. He tells the counterfire specialist when to commence the survey at the other team. The squad leader reports the exact location of the control team to the counterfire operations sergeant.

- (2) The counterfire specialist conducts the survey at the other team location. His functions at his team are similar to the functions of the squad leader at the control team.
- (3) Each computer uses either the sound-powered telephone or the radiotelephone to tell the plotter at the other team when to fire. He records the survey measurements on the Survey Data Sheet (fig. 31). This form may be produced locally under the provisions of Paragraph 20a, AR 310-1. He computes and records the distance and magnetic azimuth to the other team. The computer at the control team receives data from the other team, and tells the squad leader (chief operator) the results of the survey. He averages the results of the survey, records the

LOCATION FT. BENNING, GEORGIA SURVEY DATA SHEET NO.
 WEATHER OVERCAST DATE 1 NOV. 56
 WIND SPEED 5 MPH, DIRECTION 250° MILS
 SELF SURVEY OF BASE LINE

SHEET NO	TEAM (L OR R)	HAND REEL READINGS			COUNTER READINGS		AZIMUTH		SPEED NO	DISTANCE (YARDS)	REMARKS
		TP	ALR	DIFF	NO 1	NO 2	COMPUTED	CORRECTED			
1	R	1	7	16	094	912	1535		40	640	NO AZIMUTH CORRECTION NECESSARY
2	R	2	8	16	096	914	1550		40	640	"
3	R	3	9	16	094	910	1520		40	640	"
4											
							AVERAGE AZIMUTH	1535	AVERAGE DISTANCE	640	

SURVEY OF COUNTERTIRE WEAPONS POSITIONS

1	R	1	1	10	023	888	900	45	450	
2	R	2	3	11	028	874	920	40	440	
3	R	1	2	11	022	870	880	41	451	
4										
							AVERAGE AZIMUTH	900	AVERAGE DISTANCE	447

LEFT TEAM
 AZIMUTH OF 3-1 LINE 220°
 OPERATOR CPL WOODROW WILSON
 COMPUTER PFC FRANK T. MATZ
 FLOTTER PFC EDWARD PURCELL
 RIGHT TEAM
 AZIMUTH OF 1-1 LINE 230°
 CHIEF OPERATOR SGT ARTHUR KEITH
 COMPUTER PFC ELLWOOD HART
 FLOTTER PFC HUGH C. BERTRAND
 SGT ARTHUR J. KEITH
 (SOUND LEADER)

Figure 31. Survey data sheet. (Reproduced locally under the provisions of paragraph 20a, AR 310-1).

baseline data on the data sheet, and gives it to the plotter.

- (4) Each plotter furnishes security for his own team position. He observes the microphones and cables, and prevents any interference with the survey. He fires shots for the other team. He goes to No. 3 microphone with his individual weapon. He reports to the computer when he is ready, and he fires a weapon on the order of the computer at the other team. When his team completes its survey, he plots the length and orientation of the baseline on grid paper.

92. Surveying a Counterfire Weapon by Sound Locating

When it is necessary for the counterfire squad to survey a counterfire weapon position, such as an 81-mm mortar platoon, or its base survey point location, the survey may be made by sound locating. Sound locating is used only when the survey cannot be made by visual resection. The counterfire squad locates a counterfire weapon position or base survey point by either sound direction finding from both teams, or sound direction finding and sound ranging from one team. When a survey is made from only one team, it usually is made by the team nearer to the counterfire weapon.

93. Sound Locating a Counterfire Target

After the counterfire squad installs its equip-

ment and surveys or estimates its location, each team keeps the power turned on and its equipment in operation continuously. Every sound that reaches either team location is received by all three microphones, and recorded on the moving magnetic steel tape in the recorder. If the recorder is not stopped within two seconds after a sound is recorded, that sound is erased automatically to clear the tape for new sounds. When the squad leader (chief operator) at the control team hears what he believes to be an enemy weapon, he uses the remote control switch to stop the recorders of both teams. He reads the time differences between the sounds recorded at his team and tells the computer. The counterfire specialist (operator) reads the time differences between the sounds recorded at his team, and tells the computer. Each computer determines the magnetic azimuth from his team location to the sound source. The computer at the control team gets the magnetic azimuth at the other team by telephone or radiotelephone from the other computer, and records this data on the Sound Locating Data Sheet (fig. 32). This form may be reproduced locally under the provisions of Paragraph 20a, AR 310-1. He gives the data sheet to the plotter at the control team. The plotter plots the location of the enemy weapon, and tells the squad leader the result of the plot. The squad leader or the computer reports the location of the enemy weapon to the operations sergeant. This report includes the estimated number and type of weapons and the plotted location

of the enemy weapon position. When the counterfire squad is operating with a forward rifle company, the counterfire squad leader or the computer reports the location of each enemy weapon to the 81-mm mortar squad FDC, or the counterfire weapon crew.

94. The Rapid Method of Fire Adjustment

a. The counterfire squad uses the rapid method of fire adjustment when the situation prevents counterfire weapons from having or using accurate target data on unobserved counterfire targets. This technique also may be used in engaging unobserved counterfire targets before surveys can be made. In this method, the counterfire squad is oriented by inspection and estimation. It sound locates an enemy weapon firing and a counterfire weapon shell burst, computes the difference between these two sound source locations, and reports necessary range and deflection corrections.

b. As soon as the sound locating equipment is installed, the counterfire squad estimates the location of each team by inspecting a map or map substitute, and then plots the baseline. It estimates the counterfire weapon position by sound locating on a shot fired from the weapon position or base survey point, or by inspecting the map or map substitute. The counterfire squad tells the counterfire weapon crew or fire direction center the control team location with respect to the counterfire weapon or base survey point. The squad then is

SOUND LOCATING SET DATA SHEET NO. _____

LOCATION *FT. BENNING, GEORGIA* DATE *1 NOV 56*
 WEATHER *OVERCAST* WIND SPEED *5* MPH, DIRECTION *2500* MILES
 LENGTH OF BASE LINES *640* YDS AZIMUTH OF BASE LINE *1535*

DATA ON ENEMY TARGETS

TARGET NO	TIME OF DAY	TYPE OF GUN	LEFT TEAM DATA 3-1 AZIMUTH MILS		RIGHT TEAM DATA 3-1 AZIMUTH MILS		COMPUTER'S DATA OPT () CFW-T ()		REMARKS		
			3-1 AZIMUTH MILS		3-1 AZIMUTH MILS		COMPUTER'S DATA OPT () CFW-T ()				
			NO 1	NO 2	AZIMUTH	NO 1	NO 2	AZIMUTH		RANGE (YARDS)	AZIMUTH (MILS)
1	0800	L MORT	000	100	3800	110	060	2800	850	3340	
2	0900	HV MORT	040	140	3440	110	040	2660	1035	3100	
3	1000	HOW	040	150	3535	080	050	2080	1190	3240	

LEFT TEAM RIGHT TEAM
 OPERATOR *CPL WOODROW WILSON* CHIEF OPERATOR *SGT ARTHUR KEITH*
 COMPUTER *PFC FRANK T. MATZ* COMPUTER *PFC ELLWOOD HART*
 FLOTTER *PFC EDWARD PURCELL* FLOTTER *PFC HUGH C. BERTRAND*
SGT ARTHUR KEITH
SQUAD LEADER

Figure 32. Sound locating set data sheet. (Reproduced locally under the provisions of paragraph 20a, AR 310-1).

ready to adjust the fire of the counterfire weapon on unobserved counterfire targets.

c. When the counterfire squad leader hears an enemy weapon firing, the counterfire squad sound locates the apparent weapon position. It reports to the counterfire weapon crew or fire direction center the range and magnetic azimuth from the control team to the apparent target location. The counterfire weapon crew or fire direction center computes the firing data to the apparent enemy weapon location, using normal observed fire procedure. When the counterfire weapon crew is not equipped to compute this data, the counterfire squad plots the counterfire weapon firing data, and tells the counterfire weapon crew. Figure 33 illustrates this technique when the counterfire squad plots the firing data from the counterfire weapon position to the apparent target location. For normal observed fire procedure, see FM 6-135.

d. Surprise fire, for effect, also can be delivered when using the rapid method of fire adjustment. This is done by first adjusting the counterfire weapon onto an auxiliary target and then shifting to the apparent target location (fig. 34).

95. Decentralized Control

a. When the communications necessary for normal counterfire operations cannot be established or when it is impossible to survey the counterfire squad location, the counterfire squad may be attached to a rifle company or a firing platoon of mortar battery. In either case, the counterfire

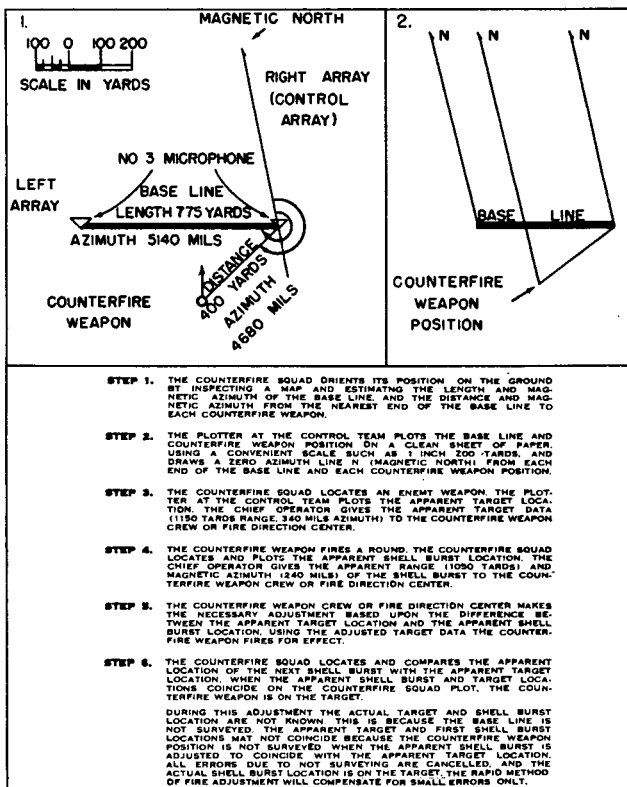


Figure 33①—Rapid method of fire adjustment.

squad reports data directly to the counterfire weapons or their FDC without communicating with the battle group counterfire operations sergeant or with a company. The squad normally operates with only one counterfire weapon or mortar platoon at a time. Because centralized

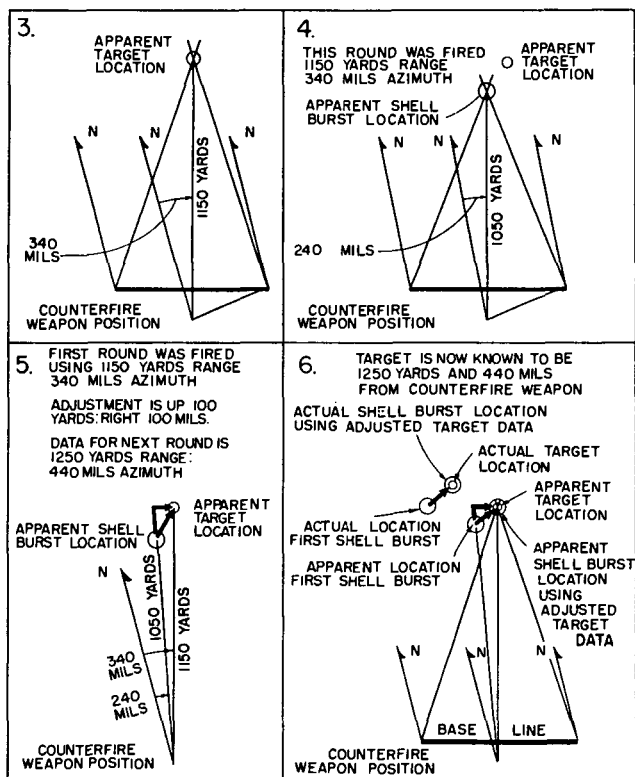


Figure 33②—Continued.

operations under the mortar battery control are more flexible, decentralized operations are terminated as soon as possible.

b. When the counterfire squad is attached to a firing platoon or a rifle company, its positions are selected and occupied in the same manner as in

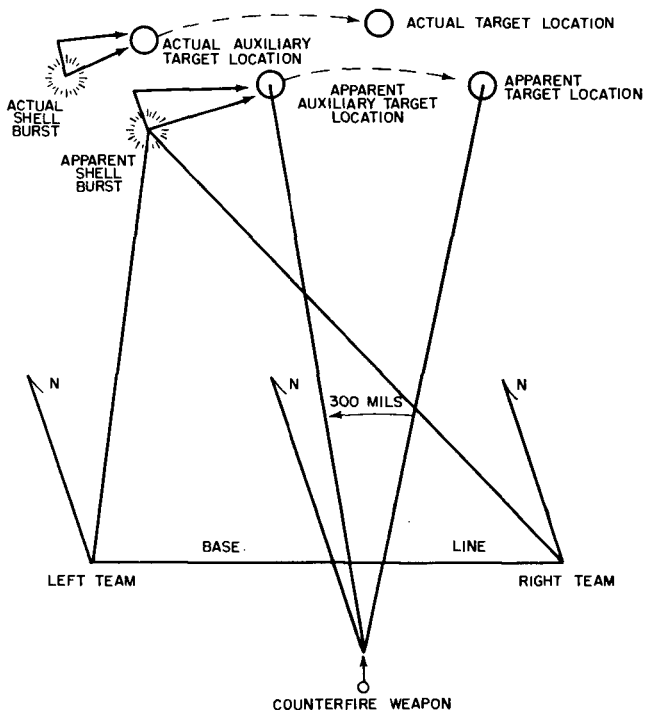


Figure 34. Surprise fire by the rapid method of fire adjustment.

normal operations. The squad lays a field telephone wire line to the mortar platoon FDC or the counterfire weapon position. To save time the squad may be able to use existing wire circuits by tying in with a nearby switchboard, establishing radio contact, or giving data to a nearby forward observer of the unit to which they are attached.

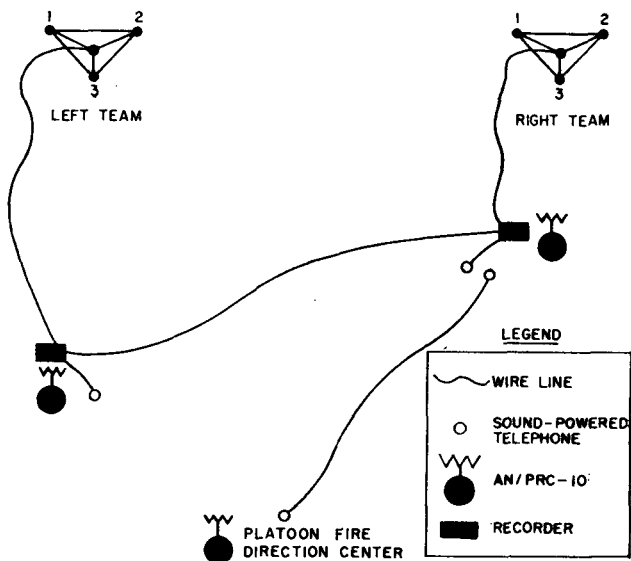


Figure 35. Schematic communication diagram for counterfire squad working with a firing platoon.

As soon as possible after installing the equipment, the counterfire squad surveys the baseline and reports the exact location of the control team to the counterfire weapon crew or mortar platoon fire direction center. When the counterfire squad and counterfire weapon are using an accurate map or map substitute with a scale of 1:25,000 or larger, the counterfire squad reports counterfire information by any convenient coordinates. When an accurate map or map substitute is not available, the counterfire squad reports counterfire information by polar coordinates—normally, with respect

to its own position. However, it may report the polar coordinates with respect to the counterfire weapon, base weapon, or base survey point location when the counterfire weapon is not using normal observed fire procedure. If the counterfire squad and the counterfire weapons are not surveyed, they use the rapid method of fire adjustment. The exact location of each counterfire target is not immediately verified by the counterfire operations sergeant as he is located with either the S2 or at the mortar battery FDC. Therefore, area fire is usually used against each counterfire target.

c. The counterfire squad and one or more counterfire weapons may work as a team to engage counterfire targets with the least possible delay. It is used only when the need for speed is more important than good counterfire weapon or counterfire squad positions. In this method, the counterfire weapon position is in the immediate vicinity of the control team location. For precision fire, the counterfire weapon or base weapon is not more than 15 yards from the No. 3 microphone of the control team. For area fire, this distance may be slightly greater. In this method, the only means of communication between the counterfire squad and the counterfire weapon are by voice and by hand and arm signals. This method has the disadvantage of limiting counterfire weapon positions to areas where the terrain is suitable for sound locating. Such terrain seldom is favorable for indirect fire weapons, such as the heavy mortar.

Therefore, when working as a team with mortars, sound locating squad and firing platoon leaders coordinate their selection of positions to obtain the best possible protection for the mortars, while providing adequate sound locating positions for the counterfire squad. This usually requires that both the mortars and the sound locating squad move frequently to protect the mortars. When a rapidly moving situation slows down enough for the counterfire squad to establish communication and make surveys, this method should not be used. Thereafter, the squad either operates through the counterfire center, is attached to a company, or operates directly with a firing platoon or counterfire weapon. When speed of operation is essential, the counterfire squad surveys the baseline, when practicable, but does not survey the counterfire weapon position. The counterfire weapon or base weapon position and its base aiming stake are on a line with the 3-1 line of the control team (fig. 36). The counterfire squad computes the distance to the target from the No. 3 microphone of the control team. It computes the angle to the target with respect to the 3-1 line of the control team rather than the magnetic azimuth to the target. The squad leader gives the target distance and the target angle to the counterfire weapon crew as range and deflection from the base aiming stake. When the counterfire weapon or base weapon is 25 yards or more from the No. 3 microphone of the control team, an experienced weapon crew may

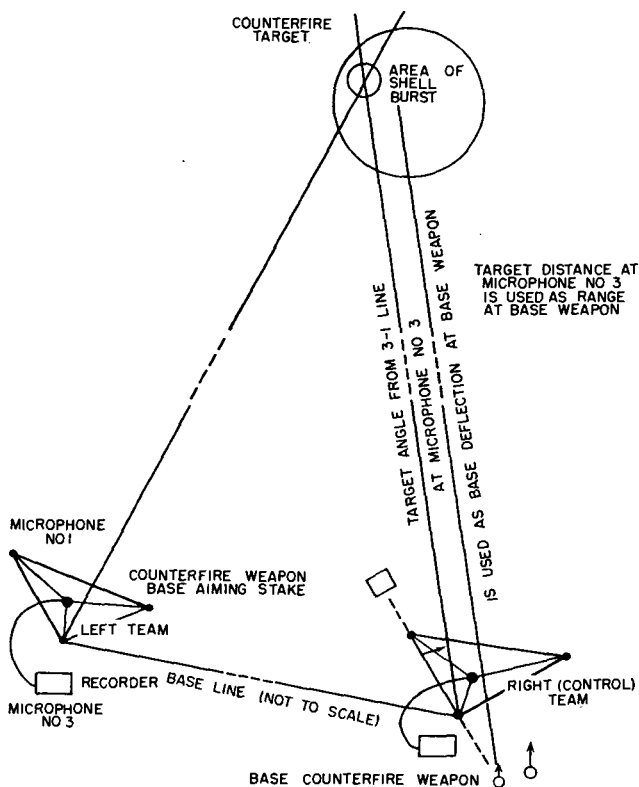


Figure 36. Counterfire squad and weapon as a team.

modify this data slightly to obtain firing data which will cover the target. When time is not available to survey the baseline, the rapid method of fire adjustment is used.

Section III. TACTICAL EMPLOYMENT

96. General

a. The mission of the counterfire squad is to locate enemy close support weapons and report this information promptly so it can be used by counterfire weapons. The type of tactical operation determines the way the counterfire squad is used, although it is usually attached to the mortar battery. The counterfire operations sergeant keeps the squad informed of the tactical situation to help it distinguish between enemy and friendly weapons.

b. In operations such as an approach march, a pursuit, early phases of a withdrawal, a delaying action, or a retirement, and early in an airborne operation, the counterfire squad may not be able to maintain communication with the counterfire operations sergeant or to survey its positions. When battery control is not practicable, the counterfire squad may be attached to a forward company or to a firing platoon.

c. While battle group plans and orders are being prepared for each operation, the counterfire operations sergeant makes preparations to collect and evaluate counterfire information. He makes a counterfire chart of the area of operations. He plots the location of each source of counterfire information and each counterfire weapon as soon as he knows them.

97. Movement to Contact

During route column the counterfire squad

moves with the battle group headquarters and headquarters company. During tactical column the counterfire squad moves with the mortar battery. During the approach march a counterfire squad may move with the mortar battery or with the leading rifle company or a selected counterfire weapon in order to begin counterfire operations promptly.

98. Attack

a. During the preparation for a coordinated attack and during the attack itself, sound locating operations attempt to locate all enemy weapons which can interfere with the battle group mission. These operations begin as early as possible and are intensified to find all enemy weapons which might interfere with the success of our attack. Enemy weapons observed or sound located are reported, recorded by the counterfire operations sergeant, confirmed by other intelligence sources, and destroyed or neutralized by counterfire weapons. To obtain surprise, counterfire information which is collected, examined, and distributed to counterfire weapons sometimes is not used to fire counterfire missions until just before the attack.

b. During the period before the attack, the counterfire squad operates under centralized control. After the attack is launched the counterfire squad may be used to report data directly to selected counterfire weapons. Counterfire squad positions

are surveyed before the attack. After the first displacement, its positions are estimated initially, and surveyed as soon as the tactical situation permits. The rapid method of fire adjustment is used before the counterfire squad is able to survey its positions. During the conduct of the attack there will often be insufficient time for the squad to install its equipment, and the volume of friendly fires so great as to prevent effective discrimination. The squad then continues to collect counterfire information using other techniques such as visual observation, and may be employed effectively to direct fires by visual observation.

99. Reorganization

The counterfire squad reorganizes, whenever necessary, such as when the battle group reaches an objective or is stopped. Preparations are made to continue the attack or to defend. The counterfire operations sergeant determines the needs of the squad, assists the squad leader to replace necessary equipment and personnel, and continues to collect counterfire information. The counterfire squad reestablishes communication with the mortar battery fire direction center, if it has been interrupted, and completes its surveys. It continues to collect counterfire information and reports it to the counterfire operations sergeant.

100. Pursuit

The use of the counterfire squad may be reduced by the lack of time to install and survey, and be-

cause decreased enemy resistance may result in fewer counterfire targets. The counterfire squad may not be able to maintain communication with the mortar battery FDC, and may be used to report data directly to a selected counterfire weapon. Normally, there will not be time to install the equipment, and the squad is used to collect counterfire information or to direct fires by visual observation. If it does occupy a position for sound locating operations, it uses the rapid method of fire adjustment since time will probably not permit a survey. If the pursuit is slowed by enemy delaying action, the counterfire squad surveys and establishes communication with the mortar battery FDC as soon as possible.

101. Defense

a. Counterfire information collecting operations are deliberate in a sustained defense. The counterfire estimate of the situation considers all available counterfire weapons and information sources. The counterfire squad may be attached to the mortar battery and normally reports data directly to the counterfire operations sergeant at the mortar battery fire direction center.

b. The counterfire squad is deployed in the battle group defensive area well forward in one of the forward company defense areas. The squad surveys its position, establishes communication with the mortar battery FDC, and normally operates under centralized control.

102. Withdrawals

a. When the battle group executes a withdrawal, the counterfire squad normally accompanies the main body. However, the counterfire squad may stay on the old position as long as friendly counterfire weapons can be used.

b. When the counterfire squad arrives at the new position, its location is surveyed in readiness for the approach of enemy weapons. Since sound locating methods do not depend on visual observation, the counterfire squad is used alike in both night withdrawal and daylight withdrawal. New positions to be occupied by the counterfire squad during a night withdrawal are surveyed during daylight, when possible.

103. Delaying Action

When delaying action is accomplished by defense on one position, the counterfire squad operates in the same manner as in a sustained defense. Counterfire weapons engage enemy weapons at greater ranges than during a sustained defense. When time permits, the counterfire squad establishes communication with the mortar battery FDC and surveys its position. If the delaying position is to be held for only a short time, the squad may report directly to selected counterfire weapons and the rapid method of fire adjustment may be used. In a delaying action on successive positions the counterfire squad is used in the same way as in a withdrawal. The use of the counterfire squad in offensive delaying action is similar to its employment in

any other attack. Whenever possible, the counterfire squad surveys, and establishes communication with the mortar battery FDC.

104. Retirement

During the initial phase of a retirement, the counterfire squad operates in the same way as in a withdrawal. After contact with the enemy has been broken, the counterfire squad operates as in any tactical movement.

105. Relief in Contact

a. Plans for the relief are as detailed and complete as time permits. The incoming mortar battery commander with his advance party conduct a reconnaissance of the position to be occupied. The counterfire operations sergeant is a member of this party if possible. The following arrangements are made concerning counterfire:

- (1) The incoming counterfire operations sergeant takes over the counterfire chart, overlays, and wire communications of the outgoing counterfire operations sergeant.
- (2) The incoming counterfire squad takes over the positions and wire communications of the outgoing counterfire squad. Sound locating equipment normally is not exchanged.
- (3) A guide leads the counterfire squad to its new positions. The incoming squad may accompany a rifle company in whose area it is to be located, and meet the guide at a designated point in the forward area.

The guide is usually a member of the outgoing counterfire squad.

b. During the conduct of the relief the counterfire operations sergeant moves forward with the mortar battery. If he has not previously contacted the outgoing counterfire operations sergeant, he does so upon arrival at the new location and obtains all pertinent information and forms. The squad is guided to its new positions and each team member is thoroughly briefed by the man he is relieving. Sound location equipment is placed in position and set in operation immediately. As soon as this is done, the squad leader notifies the counterfire operations sergeant who notifies the mortar battery commander and the S2. At this time the outgoing squad is relieved and moves directly back to a designated assembly area, usually the assembly area of the company in whose area they are located.

c. Throughout the conduct of the relief all personnel maintain strict noise and light discipline to prevent the enemy from becoming aware of any movement or activity. When communications are established, no mention of the relief is made in the clear.

106. Airborne Operations

When information of enemy weapon locations can be obtained during the reconnaissance phase, counterfire information collection begins before arrival in the landing area. The counterfire squad usually lands with the battle group reserve. After landing, counterfire information collecting is resumed as soon as possible, depending on the type

of action. If the enemy reaction forces the battle group to defend, pending an airborne buildup in the landing area, counterfire operations are intensified. In addition to weapons used against ground troops, the counterfire squad locates and reports enemy antiaircraft weapons which can interfere with later air-landed echelons.

107. Antiairborne Defense

The counterfire squad takes part in antiairborne defense. During the planning phase, the mortar battery commander studies all probable enemy landing areas and drop zones. He makes plans for employment of the squad for sustained defense, delaying action, and counteroffensive.

108. Special Operations—Attack of a Fortified Locality

In the attack of a fortified locality, counterfire information is divided into two phases—information collected before the attack and information collected during the attack. The counterfire information plan is elaborate, thorough, and flexible. Counterfire information includes the location of all enemy weapons within the zone of advance. Collection of this information starts before the attack. It covers as much of the fortified locality as the range of counterfire information sources permit. Aerial reconnaissance augments ground information. The counterfire squad reports counterfire information to the counterfire operations sergeant. It also may assist counterfire weapons by the rapid method of fire adjustment.

109. Special Operations—Operations at River Lines

Operations at river lines require the counterfire squad to be used well forward. It normally operates as close as possible to the near bank. In an attack of a river line, the counterfire squad is installed early along the near bank. Enemy weapons which may interfere with the crossing are located. Because troops are vulnerable to the grazing and flanking fires of enemy machineguns and direct fire weapons while crossing, more attention is given to locating these weapons than in other operations. After a bridgehead is established, the counterfire squad locates more distant enemy weapons whose fire threatens the bridgehead. Sound locating operations in the defense of a river line are similar to any other defense. The counterfire squad may be located on or forward of the far bank until friendly security echelons are driven in.

110. Special Operations—Night Operations

Night combat increases the difficulty of surveying the counterfire squad and counterfire weapons. Survey at night usually is done by sound locating. When the positions of the counterfire squad and the counterfire weapons are surveyed, sound locating operations are as effective at night as in daylight.

111. Special Operations—Operations in Built-Up Areas

Combat in towns may limit the effectiveness of sound locating equipment. Sound waves are deflected by buildings. The counterfire squad is located well forward and uses visual observation, when

possible. Flat-topped buildings may provide good positions for sound locating equipment.

112. Special Operations—Operations in Woods

Combat in woods limits the use of sound locating methods, similar to combat in towns. In addition, visual methods of obtaining counterfire information are limited by poor observation. Reconnaissance patrols provide counterfire information. Combat patrols may be used against enemy weapons which cannot be located accurately enough for counterfire weapons to destroy or neutralize them. In situations where sound locating equipment is not effective in woods, the sound locating squad locates enemy weapons by observation.

113. Special Operations—Mountain Operations

The extensive use of enemy indirect fire weapons in mountains requires the extensive use of friendly counterfire information sources. Counterfire squad positions in mountains usually are located on or near the topographical crests.

114. Special Operations—Operations in Snow and Extreme Cold

Combat in snow and extreme cold is characterized by the adverse effect of temperature and weather upon sound locating equipment. However, sound travels farther in dry, cold air except during storms and high wind. Sound locating equipment may not function in subzero temperatures unless special precautions are taken in its care and maintenance.

115. Special Operations—Operations in Defiles

Combat in defiles is similar to any other operation on a narrow front.

116. Special Operations—Jungle Operations

Observation and sound locating are limited by dense vegetation. Mobility of equipment also is limited in jungles. When located near the enemy, the counterfire squad is vulnerable to enemy patrols. Therefore, use is made of the proximity of other units to insure security of the counterfire squad. Special precautions are taken to protect sound locating equipment from fungus and other damage due to heat and dampness.

117. Special Operations—Desert Operations

Desert operations usually have the best natural conditions for sound locating. Other sources of counterfire information also are benefited by long-range observation. The counterfire squad is installed near the top of hills or dunes, away from obstructions. Precautions are taken to protect equipment from the abrasive action of dust and sand.

118. Special Operations—Amphibious Operations

a. In amphibious operations after landing, the counterfire squad is used in the same manner as in any other offensive operation. During the planning phase, the counterfire operations sergeant collects information of enemy weapons in the objective area. This is secured from aerial reconnaissance, photo reconnaissance, naval reconnaissance, coast watcher reports, and advance ground patrolling in the objective area. Special measures are taken before

embarkation to protect equipment from moisture and salt water during the voyage and landing. Counterfire information is processed through naval gunfire liaison parties and tactical air control parties until ground communication and counterfire information agencies are established ashore.

b. Embarkation usually is organized to permit the counterfire squad to land with elements of the mortar battery. After landing, the counterfire squad reports data through the nearest forward observer until they can establish their own communications with the mortar battery FDC.

CHAPTER 5

ASSAULT GUN PLATOON

Section I. GENERAL

119. General

This chapter deals with the tactical employment of the assault gun platoon in offensive, defensive, and retrograde operations. Depending upon the tactical plan, the platoon may be utilized in general support or attachment.

120. Mission

a. The primary mission of the assault gun platoon is to thicken and add depth to the antitank defense of the battle group.

b. The secondary mission of this platoon is to provide fire support for the rifle companies of the battle group.

121. Organization

a. General.

- (1) The assault gun platoon consists of a platoon headquarters and two sections composed of a section headquarters and two squads each. A platoon leader, a platoon sergeant, an assistant platoon sergeant, two light truckdrivers, and two radiotelephone operators comprise the platoon headquarters. The section headquarters

consist of the section leader, one ammunition handler, and one messenger. Each of the four squads has a squad leader, one gunner, one driver, and one loader.

- (2) Transportation within the platoon is assigned as follows:

Platoon headquarters-----Two $\frac{1}{4}$ -ton trucks with
tlr.

-----One $\frac{3}{4}$ -ton truck with
tlr.

Section headquarters-----One $\frac{1}{4}$ -ton truck with
tlr.

Assault gun squad-----One 90-mm gun tank
(See footnote at end
of chapter.)

- (3) The main armament of the platoon consists of four 90-mm gun tanks assigned one per squad. Each tank has mounted one caliber .50 machinegun and one caliber .30 machinegun. These machineguns are capable of providing fire support to the infantry. In addition, there is one caliber .50 machinegun mounted on the $\frac{3}{4}$ -ton truck in the platoon headquarters and one caliber .30 machinegun, M1919A6, mounted on the $\frac{1}{4}$ -ton truck in each section headquarters. These machineguns are used to provide close-in protection as required.

b. Capabilities. The platoon is capable of providing limited antitank protection and direct fire support for the battle group. The mobility of the platoon and its communications enable it to be

moved throughout the axis of advance or zone of action and to mass its fires.

c. Targets. The antitank weapon in this platoon is the battle group commander's primary organic antitank weapon and is employed as directed by the battle group commander to assist in providing antitank protection. It is also an effective direct fire support weapon and may be employed to engage point targets such as bunkers, observation posts, vehicles, and grouped personnel.

122. Duties of Personnel

a. Platoon Headquarters.

- (1) *Platoon leader.* The platoon leader is responsible for the platoon's training, control, tactical employment, and supply. He recommends to the battle group commander methods of utilization for his platoon and selects and directs the preparation of primary, alternate, and supplementary firing position areas for his sections. In addition, he advises the battle group commander on the employment of all antitank weapons organic to or attached to the battle group. During combat actions, the platoon leader either remains with the battle group commander or is in communication with him at all times. He coordinates with rifle company commanders in whose area his unit operates.
- (2) *Platoon sergeant.* The platoon sergeant is second in command of the platoon and

assumes command of the platoon in the absence of the platoon leader. He normally is charged with the responsibility for the administrative and logistical functions of the platoon.

- (3) *Assistant platoon sergeant.* The assistant platoon sergeant functions as directed by the platoon leader. He is normally charged by the platoon leader with the responsibility of ammunition resupply for the platoon.
- (4) *Radiotelephone operators.* The two radiotelephone operators operate and maintain the communication equipment in the platoon headquarters. One operator also drives and maintains a $\frac{1}{4}$ -ton truck and trailer of the platoon headquarters. They assist in the installation and maintenance of wire communications and serve as messengers when necessary.
- (5) *Light truckdrivers.* The two light truckdrivers drive and maintain the $\frac{3}{4}$ -ton truck and trailer and the other $\frac{1}{4}$ -ton truck and trailer in the platoon headquarters. They may also be used as messengers.

b. Assault Gun Section Headquarters.

- (1) *Section leader.* The section leader is responsible for the training and control of his section. He assigns primary, alternate, and supplementary position areas for his squads within the assigned section area.

He controls the fire of his section, its ammunition resupply, and the maintenance of the weapons and vehicles. When the section is operating alone, he performs the duties prescribed for the platoon leader.

- (2) *Ammunition handler.* The ammunition handler assists the section leader in ammunition resupply as directed. He also drives and maintains the $\frac{1}{4}$ -ton truck and trailer in section headquarters.
- (3) *Messenger.* The messenger performs duties as directed by the section leader and operates and maintains the AN/PRC-10 radio.

c. Assault Gun Squad.

- (1) *Squad leader.* The squad leader controls his squad, selects the exact position for his weapon, and supervises the preparation and occupation of the position. He controls the squad's fire and prepares range cards for his gun.
- (2) *Gunner.* The gunner lays and fires the gun as directed by the squad leader.
- (3) *Loader.* The loader loads the gun and acts as assistant gunner.
- (4) *Tank driver.* The driver drives and assists in maintaining the tank as directed by the squad leader.

123. Communications

a. General.

- (1) *Platoon headquarters.* In the platoon

headquarters there is one AN/VRC-18 radio. There is one telephone set TA-312/PT, one telephone TA-1/TT, and one switchboard SB-18/GT.

- (2) *Section headquarters.* In each section headquarters there is one AN/PRC-10 radio and one reel equipment CE-11.
- (3) *Squad.* Each squad has one AN/GRC-8 mounted in the tank and one telephone TA-1/TT.

b. Radio Nets (fig. 37).

- (1) The AN/VRC-18 in platoon headquarters is mounted in the platoon leader's 1/4-ton truck. This set operates in the battle group net and the platoon net.
- (2) The AN/PRC-10 in platoon headquarters operates in the platoon net and may be utilized by the platoon leader when he needs a portable radio, or it may be used by the platoon sergeant, assistant platoon sergeant, or section leaders, as directed by the platoon leader.
- (3) The AN/PRC-10 radio in each of the section headquarters operates in the platoon command net when the platoon is operating as a unit. When a section is in support of, or attached to a specific portion of the battle group, the section maintains communication with the supported unit.
- (4) The AN/GRC-8 in each tank operates in the platoon command net.

c. Wire Nets (Fig. 38).

- (1) The telephone TA-312/PT in the platoon

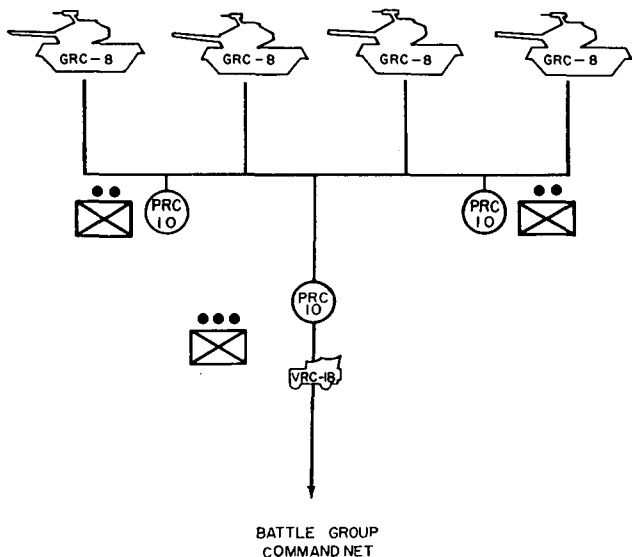


Figure 37. Assault gun platoon radio net.

headquarters operates in the battle group wire net.

- (2) The telephone TA-1/TT in platoon headquarters operates in the platoon wire net through the platoon's SB-18/GT switchboard.
- (3) The reel equipment CE-11 in each section headquarters is used by the section leader to operate in the platoon wire net and to communicate with the squads when the platoon is operating as a unit. When a section is in support of, or attached to a portion of the battle group, this equip-

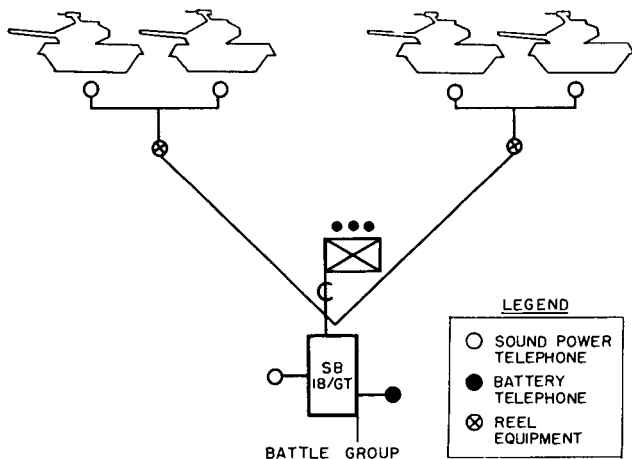


Figure 38. Assault gun platoon wire circuit.

ment operates in the wire net of the supported unit.

- (4) The telephones TA-1/TT in each of the squads tie in with the section leader's CE-11 equipment. Under some conditions it may be desirable to operate each squad's telephone directly through the SB-18/GT at platoon headquarters.

d. Platoon Communication Facilities. The organic communication facilities in the platoon will net with those of the rifle companies when the tanks are attached.

Section II. OFFENSE

124. Movement to Contact

- a.* When enemy contact is remote, the assault

gun platoon moves in the formation as a unit under battle group control. The platoon normally is located within the formation to facilitate prompt employment to the front, flanks, or rear of the formation as necessary.

b. As the probability of contact changes from remote to imminent, proper tactical organization for combat assumes increased importance. At this time assault gun platoon tanks are moved to locations where the greatest enemy armor threats are believed to exist. In the event division tanks are available for the above missions, the assault gun platoon normally continues to move in the formation as prescribed in paragraph *a* above.

c. Throughout the movement to contact, the platoon and section leaders are prepared to occupy positions from which the most dangerous avenues of enemy armor approach can be covered and/or from which the rifle companies can be given fire support as necessary.

125. Attack of Initial Objectives

a. *Troop Leading.* The platoon leader accomplishes certain troop leading steps before the attack. Ideally, all the following listed steps will be accomplished. However, in fast moving situations when attacks are launched rapidly from the march formation, it is frequently impossible to complete all of these steps. Consistent with the time available and the situation, as many of the following as possible are completed.

- (1) Receive the warning order.

- (2) Plan and execute a reconnaissance. (This is frequently limited to a map reconnaissance.)
- (3) Formulate and submit recommendations covering method of utilization, firing position areas, and tentative plan of displacement.
- (4) Receive the battle group order. (This order is frequently received in fragmentary form.)
- (5) Make necessary arrangements for the movement of the unit, reconnaissance, issuance of the platoon order, and coordination.
- (6) Complete the reconnaissance. (When applicable.)
- (7) Complete and issue the platoon order. (This order is frequently issued in fragmentary form.)
- (8) Supervise the execution of the order.

b. Methods of Utilization. The platoon, or elements of it, are employed in the antitank role or the direct fire support role. If the tanks are positioned initially to provide direct fire support for the attacking rifle companies, and if an enemy tank threat develops, the platoon immediately reverts to the role of providing antitank protection for the battle group. It is desirable to employ weapons by section, each tank of the section providing mutual support for the other.

- (1) *General support.* The platoon is usually employed in general support under the

control of the battle group commander. This method is used whenever centralized control is feasible.

- (2) *Attached.* The battle group commander may find it necessary or desirable to decentralize control of the assault gun platoon. He will accomplish this by making attachments to his subordinate units. Attachments may be complete or with limitations, i.e., for operational control. Attachment of all or a portion of the assault gun platoon may be for operational control when it is so located that it may be provided logistical support by the battle group. If all or a portion of the assault gun platoon is operating beyond the support of the battle group, the attachment must be complete with all means needed. Throughout this chapter the term attached is used. In application to tactical situations attachment or attachment for operational control may be employed according to the situation.
- (3) *Combination of methods.* A combination of methods of utilization may be used for the platoon; for example, one section may be attached to a rifle company or a task force while the platoon (-) remains in general support of the battle group.

126. Selection of Firing Positions

- a. The platoon leader assigns section firing position areas, the section leaders designate the general

location for the tanks, and the squad leaders select the exact location for their tanks. Positions should be selected from which the tanks can perform both their primary and secondary missions. If this is impossible, positions covering the most dangerous avenue of armor approach take priority. Alternate and supplementary positions are selected as time permits. The positions should provide mutual support between the tanks of the section. However, when the number of tank approaches to be covered by the platoon exceeds the number of sections, the tanks may be employed individually. When employed individually, adequate means for communications must be provided. Firing positions which permit enemy armor to be engaged from the flanks are desirable.

b. When selecting positions, the mission, location of friendly units, enemy situation, and the terrain must be considered.

c. Positions may be found in alleyways, courtyards, sunken or tree-lined roadways, or in the edge of woods. Some of the characteristics of an ideal firing position are as follows:

- (1) *Observation and fields of fire.* This is the one essential characteristic that must be met in order for the tanks to accomplish their mission.
- (2) *Cover and concealment.* Cover and concealment from both the ground and air are essential.
- (3) *Dispersion.* Dispersion between tanks should be great enough to preclude the

possibility of enemy fire on one tank, interfering with the effectiveness of another.

127. Occupation of Firing Positions

a. The unit leader (platoon or section) designates when and how the elements of the unit move into position. It is highly desirable to move into position without being observed by the enemy. Positions which cannot be occupied except under enemy observation are occupied rapidly and at the last possible moment.

b. If the positions are not to be occupied immediately, the squad leader and driver familiarize themselves with the exact position so that, on order, the tank can be placed into position without loss of time.

128. Security

a. The platoon, section, and squad leaders are responsible for providing their own local security. Whenever possible, use is made of nearby riflemen for close-in protection.

b. Maximum use of deceptive measures must be made to minimize the possibility of the enemy locating the position. These measures include skillful utilization of the terrain, camouflage, and use of alternate positions.

c. All possible passive protective measures *must* be taken for the protection of personnel and equipment against the effects of atomic weapons. The extent of the measures taken are consistent with the time and resources available in any given situation.

129. Supporting Fires

Throughout the attack, the tanks engage enemy armor and other known or suspected point targets. Unless otherwise directed, the tanks engage enemy targets immediately upon occupying a firing position. Fires on targets of opportunity are delivered as targets appear and on call from the attacking rifle company commanders. The tanks continue to fire until their fires are masked by the attacking rifle units or until they can no longer accomplish their assigned mission.

130. Alternate and Supplementary Positions

a. Alternate positions are occupied when hostile fire threatens to neutralize the tanks. The authority to occupy alternate positions is normally delegated to the section leaders. When a tank is operating independently, that authority rests with the squad leader. When alternate positions are occupied, the platoon leader is immediately notified.

b. Movements to supplementary positions are made on order of the battle group commander when the platoon is in general support. If attached to a unit, the platoon moves to supplementary positions on order of the supported unit commander.

131. Ammunition Resupply

a. Whenever possible, the tanks move into firing position with a full load of ammunition.

b. The vehicles available within the assault gun platoon for ammunition resupply consist of the $\frac{3}{4}$ -ton truck and trailer in the platoon headquarters

and the $\frac{1}{4}$ -ton truck and trailer in each section headquarters. One of the $\frac{1}{4}$ -ton trucks with trailer from the platoon headquarters may be used for ammunition resupply when not otherwise engaged.

c. When the platoon is operating as a unit, the $\frac{3}{4}$ -ton truck with trailer from the platoon headquarters normally remains in a centralized, covered location under the control of the assistant platoon sergeant. The section $\frac{1}{4}$ -ton trucks with trailers remain in a centralized, covered location in the vicinity of the section firing positions.

d. The tanks are resupplied from the section ammunition vehicle. When the supply of ammunition on the section ammunition vehicle runs low, the remaining ammunition is transloaded onto the tanks. The ammunition vehicle is then dispatched by the section leader to the platoon ammunition point for resupply. A full load of ammunition is maintained on the vehicles and tanks whenever possible so that in the event of rapid displacement, the tanks have adequate ammunition.

e. At the platoon ammunition distributing point, ammunition is taken from the $\frac{3}{4}$ -ton truck first. When the supply on the truck becomes low, the remaining ammunition is placed on the ground or on the $\frac{3}{4}$ -ton trailer and the $\frac{3}{4}$ -ton truck is dispatched to the battle group ammunition distribution point for resupply. While the $\frac{3}{4}$ -ton truck is gone, ammunition for the section ammunition vehicles is issued from the grounded stock or from the $\frac{3}{4}$ -ton trailer.

f. The platoon ammunition point dispatches forward as the platoon displaces. The assistant platoon

toon sergeant must keep himself informed as to the location of the sections, and the section leaders must be kept informed as to the location of the ammunition point. In a fast moving situation, the assistant platoon sergeant may be given the AN/PRC-10 radio from the platoon headquarters.

g. If a portion of the platoon is attached to a rifle company or task force, the platoon $\frac{3}{4}$ -ton ammunition truck and trailer normally accompany the detached section. One of the $\frac{1}{4}$ -ton trucks with trailer from the platoon headquarters then assists in the ammunition resupply of the remaining section.

132. Displacement

a. How. When the platoon is operating as a unit and the sections are operating as units, the platoon normally displaces by section echelon. When the platoon is operating as a unit, the tanks not mutually supporting, the displacement may be by echelon with individual tanks displacing as directed by the platoon leader. When a section is operating independently, it normally displaces by squad echelon. The availability of new positions, routes forward, and the enemy armor threat influence the method of displacement to be used.

b. When. The tank commences displacement when: the fires are about to become masked; when the rifle units are nearing the limits of effective supporting range; in time to support the consolidation on the objective; or to support the continuation of the attack, in order to maintain continuous anti-tank protection and fire support.

c. *Where.* The tanks displace to position previously selected by a visual or map reconnaissance. Upon arrival at the new position areas, exact locations for the tanks are selected.

d. *Who Orders.* When the platoon is in general support, the battle group commander orders displacement or approves the platoon leader's request to displace. When attached to a unit, it displaces on order of the supported unit commander.

133. Reorganization

Reorganization is a continuous process. Key personnel are replaced as necessary, and adjustments in the organization are made based on personnel and equipment losses sustained during the attack.

134. Action Within the Enemy Position

a. *When the Battle Group is Motorized.* Since the final objective is usually deep, the assault gun platoon in its movement from an initial objective to the final objective functions generally in the manner prescribed for the movement to contact (par. 125). If, prior to reaching the final objective, enemy is encountered and cannot be bypassed without endangering the accomplishment of the mission, the battle group commander may decide to commit a portion of his force to neutralize these enemy positions. All or a portion of the assault gun platoon may be used to support such an attack. The attack is conducted, as far as possible, in the same manner as prescribed in paragraph 126.

b. When the Battle Group is Operating on Foot. Shallow intermediate objectives are frequently assigned. The attack of these intermediate objectives is conducted in the same manner as prescribed in paragraph 126.

135. Consolidation

Prior to the attack, plans are made for the consolidation of the final objective when the battle group is motorized, and for each intermediate objective when it is operating on foot. Immediately upon arrival in the objective area(s), the tanks are positioned to cover the most likely avenues of armor approach(es) into the area(s). The tactical employment of the platoon is essentially the same as that prescribed for the defense (pars. 138-143).

136. Pursuit

If the enemy resistance collapses, a pursuit may be ordered. When the battle group is engaged in pursuit, the tanks are normally employed as in the movement to contact. Positions are sought from which effective fires can be delivered on the withdrawing enemy and on roads and defiles through which enemy troops and tanks may withdraw.

137. Task Force Operations

Because of the size of the areas over which the battle group operates and the fluidity of warfare under atomic conditions, the battle group commander has frequent occasion to send out small unit task forces. All or a portion of the assault gun platoon are frequently attached to such task forces.

When so attached, the platoon, or that portion of it operating as part of the task force, is employed within the task force in the same manner as prescribed for the platoon when in support of the battle group.

Section III. DEFENSE AND RETROGRADE

138. The Defense—General

The battle group normally defends as part of the division. It may, however, defend an isolated position beyond the division's supporting range. The battle group may participate in a position defense or a mobile defense.

139. Tactical Employment

Regardless of the type of defense in which the battle group is engaged, the platoon normally performs its primary mission of providing antitank protection for the battle group. Tanks may also be used to reinforce the fires of the forward rifle companies. However, whenever enemy armor appears, the tanks immediately revert to their primary mission.

140. Selection of Firing Positions

The considerations governing the selecting and occupation of firing positions are essentially the same as those discussed in paragraphs 127 and 128. At night, the tanks may be moved to alternate positions to cover the armor approaches at closer ranges.

141. Mobile Defense

a. Forward Battle Group. The assault gun platoon is utilized in general support whenever possible. The platoon (section) should be attached to the forward rifle company if it is covering a tank approach of primary concern to the rifle company. The tanks are positioned well forward within the battle position to cover the most dangerous armor approaches. Whenever possible, the tanks of the section are mutually supporting.

- (1) *Position in depth.* The assault gun platoon prepares supplementary positions within the forward rifle company areas and in depth throughout the battle area. The positions in depth are prepared consistent with the blocking and switch positions to be occupied by the rifle companies, and with due consideration for the positions which may be occupied by division tanks in the antitank role.
- (2) *Combat outpost.* Depending upon the availability of other antitank weapons and the enemy armor capability, assault gun platoon tanks may be employed with the combat outpost. When tanks are used with the combat outpost, they are attached to the unit manning the combat outpost. Terrain permitting, the tanks are positioned near the topographical crest to facilitate long-range observation and fire. During the withdrawal of the combat outpost, the tanks assist in the withdrawal

by delivering long-range fires on the enemy.

b. Reserve Battle Group. When the reserve battle group is used primarily in a blocking role, the assault gun platoon is normally employed in the anti-tank role to add depth to the antitank defense of the division area. When the reserve battle group is used as a counterattack force, the assault gun platoon is employed as prescribed for the offense.

142. Position Defense

a. In position defense the assault gun platoon is utilized in general support of the battle group except when the platoon (or section) is located in the area of a forward rifle company and is covering a tank approach of primary importance to that rifle company. In such a situation the platoon (section) may be attached to the company.

b. Tanks are rarely held in reserve. Supplementary positions are prepared in depth as well as laterally to provide flexibility to the antitank defense.

c. In the event the battle group commander counterattacks with his reserve company(ies), the tanks may support the attack by fire. It will be the exception when the tanks of this platoon are used in the counterattack as the tank portion of a tank-infantry team.

d. Tanks may be employed on the combat outpost in position defense as prescribed for the mobile defense (par. 141).

e. Depth to the battle groups' antitank defense is provided by attached tanks from the division

tank battalion, by antitank weapons of reserve company(ies), and by elements of the assault gun platoon.

143. Retrograde

a. Night Withdrawal. When the battle group is conducting a night withdrawal, all or a portion of the assault platoon may remain with the detachments left in contact. Any portion of the platoon not so employed withdraws with the main body to the new defensive positions. Plans for the movement of the platoon take into consideration the possible loss of secrecy and may include measures for covering the movement by fire.

b. Daylight Withdrawal. When the battle group is conducting a daylight withdrawal, the assault gun platoon normally remains with the forward rifle companies. When the forward rifle companies withdraw through the battle group covering force, the assault gun platoon normally drops off and supports the covering force. At this time the entire platoon is usually attached to the covering force to facilitate control.

c. Delaying Action. When the battle group is conducting a delaying action, the assault gun platoon is employed on each successive delaying position in essentially the same manner as prescribed for the mobile defense or the position defense. However, the extended frontages frequently covered in a delaying action may necessitate attachment of elements of the platoon for control purposes.

Note. The interim main armament is the tank, 90-mm gun. The ultimate main armament will be the DART, anti-tank guided missile.

CHAPTER 6

ENGINEER PLATOON

Section I. GENERAL

144. General

This chapter deals with the employment of the engineer platoon in offensive, defensive, and retrograde movements.

145. Mission

a. The mission of the engineer platoon is to increase the combat effectiveness of the infantry division battle group by means of minor engineer work and to fight as infantry if required.

b. The platoon is organized and equipped to perform minor engineer tasks such as repairing and improving roads and bridges, constructing minor field works requiring special equipment or training, installing minefields, minefield reconnaissance, supervising breaching, or removal of friendly or enemy minefields and obstacles and assistance in the construction of dummy emplacements and dummy minefield. The platoon prepares demolition charges in support of rifle elements in the destruction and reduction of enemy fortifications.

146. Organization

a. General. The engineer platoon consists of a platoon headquarters and three engineer squads.

Platoon Headquarters

Platoon Leader	1
Platoon Sergeant	1
Radiotelephone Op	1
Toolroom Keeper	1

Engineer Squad (3)

Squad Leader	1
Combat Const Spec	1
Combat Demo Spec	1
Minefield Plot	1
Pioneer	3

MAJOR ITEMS OF EQUIPMENT

Platoon Headquarters

Carbine, US Cal .30	1
Launcher, Rocket, 3.5	1
Rifle, US Cal .30	3
Intrenching Equipment Set #2	1
Pioneer Equipment Set #3 (Engr Combat Platoon)	1
Saw, chain, portable, gasoline driven, 36" blade	3
Tool Set, electric, portable, 60 cycle	1
Trailer, Cargo, ¼-T 2W	1
Truck, Utility, ¼-T 4x4	1
Radio Set, AN/PRC-10	1
Telephone Set, TA312/PT	1

Engineer Squad (3)

Launcher, Grenade Rifle	1 (3)
Rifle, US Cal .30	7 (21)
Carpenter Equipment Set #1 (Engr Squad)	1 (3)
Pioneer Equipment Set #1 (Engr Squad)	1 (3)
Demolition Equipment Set #5 (Individual)	3 (9)
Demolition Equipment Set #7 (Electrical)	1 (3)
Trailer, Cargo, 1½-T 2W	1 (3)
Truck, Cargo, 2½-T, 6x6, LWB WW	1 (3)
Detector Set, AN/PRS-3	3 (9)

Note. Figures in parentheses are total for the three squads.

b. Transportation. The transportation within the platoon is assigned as follows:

- (1) The ¼-ton truck and trailer is used to transport the platoon leader, the platoon sergeant, 2 enlisted men, and their equipment, and for liaison between platoon

headquarters and the operating engineer squads.

- (2) The squad 2½-ton truck and 1½-ton trailer is used to transport the squad and its equipment. In addition, these trucks will be used to transport a pro-rata share of the platoon tools based on the platoon loading plans.

c. Capabilities. The platoon is completely mobile. It is equipped to furnish its own local security and can perform a variety of tasks requiring the skill and training of engineer troops.

d. Limitations. The platoon is not capable of sustained operations away from the parent company unless attached to another unit for rations and supplies. The platoon must operate within the supporting range of the fires of the battle group unless it is augmented with men and weapons. The construction capability of the platoon is limited to use of organic hand tools and special equipment.

147. Duties of Personnel

a. Headquarters Personnel.

- (1) The *platoon leader*, an engineer officer, is responsible for the command, control, training, supply, and employment of his platoon. He normally operates under the staff supervision of the battle group S3. During periods when an engineer company is not in support of or attached to the battle group, the engineer platoon leader acts as a special staff officer advising the battle group commander on engi-

neer matters and maintains close liaison with the divisional engineer to obtain needed technical advice.

- (2) The *platoon sergeant* is second in command. He performs specific duties as directed by the platoon leader.
- (3) The *radiotelephone operator/driver* drives and maintains the 1/4-ton truck of the platoon headquarters and operates and maintains the AN/PRC-10 radio.
- (4) The *toolroom keeper* is responsible for the maintenance of all engineer tools within the platoon headquarters. He is also the assistant driver and assistant radiotelephone operator for the platoon headquarters.

b. Engineer Squad Personnel.

- (1) The *squad leader* is responsible for the command, control, training, and employment of his squad. He receives his orders from the platoon leader or platoon sergeant. He must be qualified to perform all the duties of any member of his squad. He insures that proper maintenance is performed on the organic transportation, weapons, tools, and special equipment of his squad. Each squad leader is an understudy to the platoon sergeant and must be qualified to take over second in command of the platoon at any time.
- (2) The *combat construction specialist* is the second in command of the squad. He is qualified to supervise the repair or

strengthening of timber bridges, construction or repair of culverts, hasty repair of damaged sections of roads, and construction of minor field works requiring special equipment on training. He is qualified to supervise the installation of wire and other obstacles.

- (3) The *demolition specialist* is school trained in the recognition, arming, neutralization, installation, and removal of friendly and enemy mines and booby traps. He is responsible for training all members of the squad to assist him in performing his tasks. He is responsible for supervising the computing and prefabrication of demolition charges for electric or nonelectric firing and the proper placement and detonation of them.
- (4) The *minefield plotter* is school trained in the recognition of enemy mines, booby traps, and minefield patterns. He is responsible for the use and maintenance of the AN/PRS-3 mine detectors organic to the squad. He is responsible for plotting the installation of friendly minefields installed by the platoon, for completing required records of the installed minefield, and for overall supervision of the removal of friendly or enemy minefields. He may be made available to an infantry company engaged in laying minefields to insure correct recording and reporting of such fields.

- (5) The three *pioneers* in each squad perform such functions as directed by the squad leader. One pioneer in each squad maintains and operates the squad's 2½-ton truck. Pioneers are trained in the use of the AN/PRS-3 mine detectors and the platoon rocket launcher.

148. Communications

The communication facilities of the platoon are limited. One AN/PRC-10 radio is assigned to the platoon and provides the platoon an entrance into the battle group administrative net. One TA-312/PT telephone set is assigned to the platoon for use in the battle group wire system.

149. Employment

a. All members of the engineer platoon are skilled, trained engineer soldiers and should be utilized as such in order to secure the maximum engineer effort with organic battle group troops. The platoon should not be employed in performing tasks which are within the capability of other troops. When a company of engineers from the division engineer combat battalion is attached to or in support of the battle group, the commander of the company is the battle group engineer. The engineer platoon is either placed in support of or attached to the engineer company or remains under direct control of the battle group commander, depending upon the tactical situation.

b. The platoon assists in strengthening the passive defense measures within a defensive system

primarily through extensive use of barbed wire and mines.

c. Depending upon the tactical plan, the platoon may be used in general support of the battle group, or the platoon or portions of it may be used in direct support of a specific portion of the battle group or may be attached to task forces or rifle companies.

d. The following principles of engineer employment should be adhered to when considering the commitment of the engineer platoon:

- (1) *Unity of command.* Every effort should be made to maintain the unit integrity of the platoon. The platoon is trained as a team and best performs when operating as a team. Tasks should be assigned to the platoon leader with the responsibility and authority for him to accomplish them by the most advantageous utilization of the varied skills of the platoon's members.
- (2) *Technical supervision.* Technical supervision of the platoon's activities is principally exercised by the platoon leader. The specialized skills of all members of the platoon are best utilized in an advisory capacity with elements of rifle platoons or attached working parties in accomplishing specified tasks and in training infantrymen in the operation of the basic engineer tools and equipment found in the engineer platoon. The platoon is not used as a labor pool to perform tasks which can be performed by other troops.

- (3) *Directed effort.* Maximum engineer effort within the battle group will be obtained by the careful assignment of tasks to the engineer platoon with priorities for completion. Standard operating procedure for the platoon consists of—prior planning, organization of working parties, procurement of required materials either standard or expedient, and aggressiveness, coupled with initiative directed at accomplishing assigned tasks. The maximum engineer effort is obtained by careful assignment of tasks to be accomplished by established priorities.
- (4) *Working reserve.* The small numerical size of the platoon will seldom permit any element of the platoon being considered in reserve. Any element of the platoon not committed to performing a specified task, is employed in preparing and maintaining tools and equipment, or engaged in general engineer work in the battle group area.

Section II. OFFENSE

150. Methods of Utilization

a. The tactical employment of the platoon is affected by the dispersion and rapidity of movement that characterizes the operations of the infantry battle group under conditions of atomic warfare. The mobility of the platoon is limited to the cross-country mobility of its organic vehicles. However,

this mobility enables the platoon to move rapidly to any part of the axis of advance or zone of action to assist in maintaining the impetus of the attack. Two methods of utilization of the platoon are—

- (1) *Support.* In support (general or direct) the platoon or a portion of the platoon supports the efforts of the battle group or a specific portion of the battle group under control of the battle group commander.
- (2) *Attachment.* The platoon or a portion of the platoon is attached to a specific portion of the battle group when control of the platoon by the battle group commander is impractical due to distance or the tactical situation.

b. When a friendly atomic explosion precedes the attack, the engineer platoon normally occupies a position with the assault elements of the battle group. Maximum use is made of all natural protection.

c. After the atomic explosion, the engineer platoon moves with the leading elements in order to assist in removal of obstacles created by the atomic explosion. These obstacles may include trees blown across roads, displaced enemy or friendly mines, and other obstructions that block the path of advance. Due to the limited strength and equipment of the engineer platoon, obstacle neutralization or removal is normally limited to that which can be accomplished through the use of hand placed demolition charges or organic hand tools.

Section III. DEFENSE AND RETROGRADE

151. Defense

In the defense, the efforts of the engineer platoon are concentrated on tasks of construction or destruction which impede the mobility of the attacker. These measures include construction of all types of obstacles which require the engineering skills of the specialists in the platoon as well as the execution of demolition tasks. In addition, the platoon may furnish technical advisors to other units in the battle group to assist them in organizing the ground, preparing obstacles, and constructing field fortifications.

152. Retrograde

The principal mission of the engineer platoon in a retrograde operation is the preparation of obstacles to impede the advance of the enemy.

a. When the battle group is conducting a night withdrawal, all or a portion of the engineer platoon may remain with the detachments left in contact. Any portion of the platoon not remaining with the detachments left in contact withdraws with the main body to the new defensive position.

b. When the battle group is conducting a daylight withdrawal, the engineer platoon supports the infantry units in contact.

PART TWO
LOGISTICS AND PERSONNEL
CHAPTER 1
SUPPLY AND MAINTENANCE PLATOON

Section I. MISSION, ORGANIZATION, DUTIES,
AND INSTALLATIONS

153. Mission

The supply and maintenance platoon performs supply, transportation, and maintenance functions for the battle group.

154. Capabilities

The supply and maintenance platoon is capable of—

a. Organizing, establishing, and operating a supply and service area for the battle group.

b. Establishing and operating a battle group logistical control point.

c. Requesting and receiving all classes and types of supplies (except signal repair parts) from the division technical services and the Army ammunition supply point.

d. Maintaining sufficient records and control in combat to show the status of supply and equipment within the battle group and to assure that timely re-

quests for resupply are submitted to higher headquarters.

e. Performing 1st and 2d echelon maintenance within the capabilities of the personnel and available tools.

f. Evacuating all types of equipment, within its limited capabilities, that require a higher echelon of maintenance.

g. Establishing a salvage, excess, and captured enemy materiel collecting point.

h. Operating a conventional battle group supply office when in garrison.

i. Providing terminal guidance for Army aircraft in airborne operations and aerial resupply missions.

155. Organization

a. The supply and maintenance platoon is organized into a platoon headquarters, an ammunition squad, and a truck squad. The organization permits a high degree of flexibility and a 24-hour operational capability to include establishment and operation of the battle group logistical control point.

b. During combat operations, the platoon headquarters forms and directs the operation of the battle group supply and service area.

c. The ammunition squad has the primary responsibility of establishing and operating the battle group ammunition distributing point. Using trucks from the ammunition squad, the ammunition is drawn from the Army ammunition supply point and

issued at the battle group ammunition distributing point or delivered to subordinate units.

d. The truck squad has the primary responsibility of transporting mess equipment and personnel, company individual bed rolls, and the reserve ration for all companies of the battle group. When the trucks are not being utilized to transport one of the above, they are available for troop or other resupply missions.

156. Individual Duties

a. The *platoon leader* is responsible for the accomplishment of the platoon's mission. He coordinates continuously, both in planning and in combat operations, with the battle group S4 and the platoon supply and maintenance officers. For additional duties, see FM 7-40.

b. The *maintenance officer* directs and supervises the maintenance activities on the wheeled and tracked vehicles of the battle group. He is responsible for procuring, storing, and issuing repair parts, except signal repair parts.

c. The *supply officer* supervises the supply operation of the platoon and maintains liaison with the supported elements of the battle group.

d. The *motor sergeant* operates the truck dispatch office and assists the maintenance officer in supervising and coordinating maintenance activities on the wheeled and tracked vehicles of the battle group.

e. The *supply sergeant* assists the supply officer in supervising the supply operation of the platoon.

f. The *assistant supply sergeants* perform supply duties as assigned by the supply officer or supply sergeant.

g. The *ration distribution sergeant* assists the platoon supply officer in determining and processing the daily ration requirements. He also assists in establishing and operating a class I distributing point.

h. The *wheeled and tracked vehicle mechanics* perform organizational maintenance.

i. The *ordnance parts specialist* procures and maintains ordnance repair parts for issue to elements of the battle group.

j. The *supply clerks* perform clerical duties connected with supply and supply accounting.

k. The *ammunition squad leader* directs the activities of his squad and operates the battle group ammunition distributing point. He is assisted by the ammunition specialist.

l. The *truck squad leader* directs the activities of his squad and assists the motor sergeant in dispatching and controlling the vehicles of his squad.

157. Battle Group Supply and Service Area

The battle group supply and service area is the focal point for logistical operations in the battle group. It is operated by the supply and maintenance platoon leader of headquarters and headquarters company. It is located so as to efficiently provide logistics support for the battle group without presenting a profitable target for enemy weapons. The activities within the area are under

the staff supervision of the battle group S4 (logistical officer).

158. Characteristics of a Battle Group Supply and Service Area

Desirable features of a battle group supply and service area include the following:

a. The area should be convenient to the units being served. If possible, there should be a convenient road net front to rear that allows units to reach the area quickly and easily. The road system should contain alternate routes so that movement can still be made even though some roads are cut off by excessive travel or enemy activity.

b. The area should not interfere with operations of the combat elements. It must be far enough from the combat elements so that it does not occupy space needed by those units. Supply and maintenance activities and vehicular traffic must not impede a tactical unit's freedom of movement.

c. Sufficient area to permit dispersion of vehicles and activities.

d. Concealment from hostile ground and aerial observation.

e. Firm ground for parking vehicles.

f. A location where no terrain feature, such as an unfordable river, is or may become, a barrier to supply operations.

g. Terrain features which favor defense against air or ground attacks and facilitate local security.

h. Sources of water for vehicles and bathing.

i. As far distant as possible from any other probable atomic target.

159. Activities in the Battle Group Supply and Service Area

Activities in the battle group supply and service area include—

- a.* Logistical control point.
- b.* Class I distributing point.
- c.* Kitchen areas for all unit kitchens (when under battle group control).
- d.* Maintenance area.
- e.* Class III distributing point (gasoline tank trucks from the division quartermaster company).
- f.* Bath and clothing exchange units (when allocated to the battle group from division quartermaster company).
- g.* Motor park.
- h.* Salvage collecting point.
- i.* Collecting points for excess equipment and captured enemy materiel.
- j.* Ammunition distributing point.
- k.* A drop zone or aerial resupply point.
- l.* Logistical elements of attached units.

160. Logistical Control Point

The logistical control point is an installation organized to facilitate the control and flow of supplies from the division technical services to the supply and service area, or direct to the combat elements. It functions under the supervision of the battle

group S4. The supply and maintenance platoon leader operates the control point in the supply and service area with selected personnel from the platoon. Other personnel who will operate from the control point include two senior supply clerks and two general supply clerks (one is a radio operator). Other personnel of the platoon, to include the supply officer, operate throughout the supply and service area receiving and issuing supplies and equipment, performing maintenance, dispatching vehicles, and operating other receiving and distributing points as required. The supply and maintenance platoon leader supervises and controls the logistical control point through the supply officer and maintenance officer.

Section II. COMBAT SUPPLY OPERATIONS

161. Definitions and Abbreviations

a. Class I supplies consist of those items which are consumed by personnel or animals at an approximately uniform rate, irrespective of local changes in combat or terrain conditions. This uniform rate of consumption permits supply agencies to place balanced stocks in depots, supply points, and distributing points where they may be obtained by using units on the basis of strength rather than itemized requisitions. Examples are rations and forage.

b. Class II supplies are supplies and equipment authorized a unit by the Department of the Army as prescribed in tables of equipment, tables of al-

lowance, equipment modification lists, letters of authorization, and other similar authority.

c. Class III supplies consist of fuels and lubricants for all purposes. Examples are petroleum products such as gasoline, diesel oil, kerosene, fuel oil, lubricating oil and greases, and solid fuel such as coal, coke, and firewood.

d. Class IV supplies are supplies and equipment authorized a unit by intermediate commanders that are above the authorization established by Department of the Army, or include items other than those authorized by Department of the Army. An example is assault boats authorized to a battle group by the division commander for a river crossing operation.

e. Class V supplies consist of ammunition, explosives, and chemical agents. Examples are small arms and artillery ammunition; grenades and mines; explosives, such as dynamite, TNT blocks, fuses, blasting caps, and detonators; pyrotechnics; and chemical agents including flamethrower fuel.

f. Repair parts consist of those repair parts, assemblies and secondary items used primarily in the support of maintenance. Repair parts authorized a unit are prescribed in technical service manuals or authorized organizational stockage lists.

g. Miscellaneous supplies are those supplies not included in any of the five classes described, such as water and maps.

h. Regulated items are those articles which are scarce, costly, or of a highly technical or hazardous

nature, which for this or some other reason, must be controlled closely during and after distribution.

i. Supply point distribution is a method of distributing supplies in which the receiving unit uses its organic transportation to obtain supplies at a supply or distributing point in the rear and moves those supplies back to its own area. Example: an infantry battle group using ammunition vehicles from its supply and maintenance platoon travels to the rear and draws ammunition from the Army ammunition supply point.

j. Unit distribution is a method of distributing supplies in which the issuing agency (supply or distributing point) transports the supplies direct to the receiving unit, the transportation being furnished by the issuing agency. Example: Rations for an infantry battle group being delivered to the battle group class I distributing point by the division in vehicles organic to the division.

k. ADP-----Ammunition Distributing Point.

l. ASP-----Ammunition Supply Point.

m. DP-----Distributing Point.

n. LCP-----Logistical Control Point.

162. General Supply Procedures

a. Equipment and supplies to be carried by individuals and units of the battle group are listed in tables of organization and equipment (TOE's) and in directives from commanders.

b. Requests for supplies are submitted through supply channels. Units submit requests (a written message, telephone call, radio message, etc.) to the

LCP. Necessary consolidations, postings, annotations, and requisitions are prepared at the LCP. Requisitions are forwarded to division by the LCP.

c. In normal situations the division transportation battalion will deliver all class I, II, III, and IV supplies by unit distribution. A one-day reserve of rations is carried on each company kitchen truck. The battle group does not have the capability to effect its own resupply by supply point distribution, except for ammunition and emergency class I supplies. Ammunition (class V) resupply is obtained by replenishment from Army ammunition supply points utilizing the transportation organic to the battle group.

d. The battle group collects salvage materiel for evacuation by the division transportation battalion to the division salvage collecting point.

163. Systems of Supply

a. *General.* The systems for supply and resupply within the battle group are planned, coordinated, and supervised by the S4. The operation of the systems is the responsibility of the supply and maintenance platoon leader who utilizes the LCP as a primary means of exercising operational control and coordination. Supply of class I, II, III, IV, and V items is under the immediate jurisdiction of the supply warrant officer, assisted by two supply sergeants and a ration distributing sergeant.

b. Class I Supplies.

- (1) *Requests and requisitions.* All units of the battle group that are authorized a kitchen and mess personnel report daily

the number and types of rations desired for the next succeeding 24-hour period to the LCP. The deadline for this report is established in the battle group SOP or administrative order. The LCP consolidates the daily ration request by number and type of rations, and submits the report daily to division prior to a deadline established by the division.

- (2) *Distribution.* Rations are delivered daily by division to the battle group class I distributing point operated by the ration distributing sergeant. Here, rations are broken down into unit lots in accordance with the requests originally submitted by the units to the LCP. At a designated time, mess personnel from each kitchen draw their rations, take them to the kitchen location, break the ration into three meals, and prepare the food.

c. Class II Supplies.

- (1) *Requests and requisitions.* All elements of the battle group normally enter combat with all authorized class II items. When a class II item is lost, damaged, destroyed, or worn out, a request for a replacement item is made by the unit commander to the LCP by message or radio. Class II requests are consolidated for all units of the battle group, posted, annotated, and placed on requisition by the LCP. The requisitions are then transmitted to division.

- (2) *Distribution.* Class II items are delivered by division to the battle group supply and service area where they are handled by an assistant supply sergeant. Here, the supplies are broken down into unit lots in accordance with the original requests submitted by the units to the LCP. The supplies are normally delivered to the requesting units by mess personnel with rations. A large requirement of class II items, such as a change from cotton to wool clothing, is usually distributed when the battle group is out of contact with the enemy.

d. Class III Supplies.

- (1) *Requests and requisitions.* No formal requisitioning procedure is established for class III supplies. In lieu thereof, the LCP submits a daily estimate of class III requirements to division. The estimate is based upon the distance the battle group will move, distances to supply and distribution points, and the quantity and type of transportation involved. The details of the report and deadline time for submission are included in division SOP's or administrative orders.
- (2) *Distribution.* The class III distributing point in the battle group supply and service area operates under the direct supervision of one of the assistant supply sergeants. POL is delivered by division to the battle group class III distributing

point in 1,200-gallon gasoline tank trucks. The use of five-gallon gasoline cans is held to a minimum, and they are not used at the battle group or unit level except in the event of emergency. As the elements of the battle group require class III supplies, a gasoline tank truck is sent to the company supply areas if the tactical situation permits; otherwise, units send vehicles back to the battle group class III distributing point for refueling.

e. Class IV Supplies.

- (1) *Requests and requisitions.* When class IV items are required, a request for replacement is handled essentially in the same manner as that for class II items with two exceptions. One of the primary differences is that requests for class II items are based on an authorized Department of the Army allowance, whereas class IV requests are for items not included in such prescribed allowance tables. The other difference is that class IV supply requires command authorization.
- (2) *Distribution.* Class IV items are delivered by division to the battle group supply and service area, where they are handled by an assistant supply sergeant. Here the supplies are broken down into unit lots in accordance with the requests submitted by the units. If possible, the supplies are delivered to the requesting units on transportation going from the battle

group to the units. It is frequently necessary, however, to make special delivery trips from battle group to the units because of the size, bulk, and quantity of the supplies, and because of the urgent need.

f. Class V Supplies.

(1) Definitions.

(a) Basic load.

1. Units enter combat with a basic load of ammunition. The basic load is the ammunition carried by individuals and on vehicles of a unit. It includes ammunition carried by the individual soldier, ammunition stowed in self-propelled weapons, and ammunition carried in prime movers and in unit trains. For ammunition items fired from weapons, the basic load is expressed in terms of rounds per weapon; for bulk allotment items, such as grenades, mines, and demolitions, it is expressed in terms of units of measure, such as "each" or "pound."
2. The basic load is a fixed amount of ammunition established by Department of the Army concurrently with the publication of tables of organization or changes to them.
3. The basic load gives a unit sufficient ammunition to initiate combat, and in addition, to provide tactical reserve of ammunition to meet emergencies, such

as temporary delay in replenishment or unexpected heavy expenditures.

(b) *Required supply rate.*

1. The required supply rate is the amount of ammunition estimated to be required to sustain the operations of any designated force without restriction for a specified period. For ammunition items fired from weapons, this rate is expressed as rounds per weapon per day; for bulk allotment items, it is expressed in the appropriate unit of measure per individual, organization, or vehicle per day.
2. The required supply rate is computed on and applied to tactical weapons in tactical units only.

(c) *Available supply rate.*

1. The available supply rate, which is announced by each commander, is the rate at which units within his command may consume ammunition during a specified period. For ammunition items fired from weapons, this rate is expressed in terms of appropriate units of measurement per organization, individual, or vehicle per day.
2. The available supply rate is essentially a measure used to control the amount of ammunition that may be drawn and expended by a unit. It normally is announced periodically for a specified period.

3. The available supply rate is computed on, and applied to, tactical weapons in tactical units only.
- (2) *Requests and requisitions.* Element of the battle group submit requests for ammunition by type and amount to the LCP by written or verbal messages. After a request has been recorded at the LCP, it is sent to the battle group ammunition distributing point, located in the battle group supply and service area, for action.
- (3) *Distribution.* Class V supplies are issued to units at the battle group ammunition distributing point or are delivered to units by the ammunition squad of the supply and maintenance platoon. The squad operates under the supervision of the squad leader. When unit requests are received, they are checked and recorded by the ammunition specialist. Ammunition is then issued to the requesting unit. When one or more of the ammunition squad vehicles are unloaded, they are dispatched to the Army ammunition supply point to draw a resupply of ammunition. The authority to draw the ammunition is contained in the transportation order as prepared by the ammunition specialist. En route to the Army ammunition supply point, the leader of the vehicle(s) or the driver(s) stop at the division ammunition office and inform the DAO of the amounts and types of ammunition required by the

battle group. Once the DAO has approved and authenticated the transportation order, the drivers proceed to the Army ammunition supply point, draw the ammunition and return to the battle group ammunition distributing point.

g. Repair Parts.

- (1) *Requests and requisitions.* All elements of the battle group normally enter combat with all authorized repair parts. When a repair part is consumed, a replenishment part is requested from the supply and maintenance platoon. Authorized stocks of repair parts of the supply and maintenance platoon are normally replenished by technical service mobile repair teams. Parts authorized for use by the battle group but not ordinarily stocked are requisitioned by the maintenance officer through maintenance channels, using the requisitioning procedures established by AR 711-16.
- (2) *Distribution.* Repair parts are delivered to the supply and maintenance platoon which makes distribution to the units.

164. Resupply for Subordinate Elements of the Headquarters and Headquarters Company

a. Requests and Requisitions. Subordinate elements of the headquarters and headquarters company request all supplies in the same manner as the other units of the battle group. All requests are sent to the logistical control point.

b. Distribution. Supply point distribution from the distributing points in the battle group supply and service area is habitually employed.

165. Aerial Resupply

a. Requests and Requisitions. Aerial resupply requests and requisitions follow the same procedure as prescribed for routine requests. All requests are sent to the logistical control point.

b. Coordination. All aerial resupply is coordinated at the division level. Division notifies the logistical control point of the time and place aerial delivery can be expected.

c. Direct Delivery to Requesting Unit. If direct aerial delivery is requested and approval is given by division, the requesting unit must establish terminal guidance and recover its own supplies at its drop zone or aerial resupply point.

d. Delivery to Battle Group. If aerial resupply to battle group is to be made, the supply and maintenance platoon leader must establish a drop zone or aerial resupply point. He must furnish terminal guidance and insure that the supplies are recovered. It may be necessary for him to request assistance from the requesting unit or from the battle group reserve elements for the recovery operation.

e. Selection, Preparation, and Marking of Drop Zones. For details as to the selection and preparation of a suitable area for a drop zone, see FM 57-20. As a minimum, the drop zone should be easily recognizable from the air under the expected conditions of visibility and located so as to permit

a straight approach by the aircraft. The procedure for marking the drop zone will be contingent on the tactical situation, communications available, weather, and conditions of visibility. The drop zone should be marked with panels (or lights during conditions of low visibility), smoke, and electronic navigational aids. The panels or lights are set up in a prearranged single block letter of the alphabet (excluding B, D, G, I, Q, W, and M) approximately thirty yards in height and width and readable from the desired direction of flight of the delivery aircraft. Radio communication with the delivery aircraft from the drop zone is highly desirable to provide the pilot with navigational aid, wind conditions, and possible enemy interference. Of major importance is one difference in the marking of the drop zone dependent on the parent service of the delivery aircraft. Basically, with Air Force aircraft, Army personnel tell the pilot the desired impact point on the drop zone and the pilot computes the release point for dropping the supplies; with Army aircraft, the Army personnel tell the pilot where to release or drop the supplies so that the supplies land on the drop zone.

- (1) *Air Force aircraft.* The prearranged code letter is placed on the drop zone at the desired impact point. This location will be given to the delivery aircraft using the applicable Universal Transverse Mercator Grid (UTMG). The aircraft then computes the release point using their Computed Air Release Point (CARP) system.

- (2) *Army aircraft.* The location of the pre-arranged code letter is immaterial; it merely identifies the drop zone to the aircraft. In addition to the code letter, a T is laid out with panels (or lights) on the drop zone with the stem of the T pointing toward the desired direction of approach of the aircraft. The aircraft will fly up the stem of the T, releasing its bundles as it crosses the junction of the stem and crossbar. The T must be so located that the impact area of the supplies is on the drop zone.

166. Functions of the Logistical Control Point

The logistical control point operates primarily as a control and coordination center for the logistical activities of the battle group. Under the supervision of the S4 and the operational jurisdiction of the supply and maintenance platoon leader, the LCP prepares and submits reports and estimates, consolidates requests for supplies, establishes priorities, disseminates logistical information, computes experience data, supervises the receipt and distribution of supplies, exercises control over the supply and service area, controls battle group transportation, supervises maintenance activities within the battle group, and maintains continual liaison with division trains.

a. Supply operations (by class) are to—

(1) *Class I.*

- (a) Prepare the daily ration request and submit it to division.

- (b) Disseminate the battle group feeding plan.
 - (c) Supervise kitchen and mess personnel.
 - (d) Coordinate ration issues to unit kitchens.
- (2) *Class II.*
- (a) Consolidate unit requests and prepare requests to division (through supply channels).
 - (b) Maintain records on regulated items.
 - (c) Coordinate issues to requesting units.
- (3) *Class III.*
- (a) Prepare and submit the daily estimate of class III expenditures to division.
 - (b) Coordinate issues to requesting units.
- (4) *Class IV.*
- (a) Consolidate unit requests and prepare requisitions to division (through command channels).
 - (b) Coordinate issues to requesting units.
- (5) *Class V.*
- (a) Supervise the consolidation of unit requests to insure rapid replenishment of supply.
 - (b) Maintain records as required regarding expenditures, available supply rate, etc.
 - (c) Coordinate issues to requesting units.
- (6) *Miscellaneous supplies.* Receive and process requests and supervise distribution to requesting units in the same man-

ner as for other supplies, except for maps.

b. Maintenance operations are to—

- (1) Prepare maintenance reports as required.
- (2) Supervise activities of the maintenance warrant officer.
- (3) Submit timely requests for repair parts for maintenance.
- (4) Establish priority of work.
- (5) Coordinate activity of maintenance elements attached to battle group from higher headquarters.

c. Transportation operations are to—

- (1) Supervise the operations of motor sergeant.
- (2) Establish priorities for use of battle group supply vehicles.
- (3) Coordinate use of vehicles when vehicles are pooled as an operational expedient.
- (4) Coordinate operational use of vehicles with units to insure that proper and timely scheduled maintenance is performed on all vehicles.
- (5) Coordinate activities of vehicles attached to battle group from higher headquarters.
- (6) Establish and disseminate traffic plans and routes with the battle group area.

d. Aerial resupply operations are to—

- (1) Supervise operation of the drop zone or aerial resupply point.
- (2) Coordinate aerial resupply missions with the requesting units, division trains, and other interested agencies.
- (3) Provide terminal guidance for aerial delivery at the drop zone or aerial resupply point.

167. Mess Management

a. Types of Rations. (See FM 101-10 for types of rations currently in use.)

b. Control of Kitchens.

- (1) Except in static or reserve situations, unit messes are habitually under battle group control, and the kitchens, therefore, are located in the supply and service area. The control of kitchens involves supervision of preparing food and the control of kitchen vehicles.
- (2) Kitchens may be released to unit control. In this case, they may be located at the unit mess location. Kitchens are located as close as possible to the troops they are serving.
- (3) All factors should be considered in determining the method of control to be adopted to insure use of the method that most nearly meets the requirements of a given situation. All methods should be

practiced during training so units can operate efficiently under each method. The method of control is recommended by the S4.

(4) The following factors are considered in determining the method of control by the S4:

- (a) The tactical situation.
- (b) The area over which the battle group is deployed.
- (c) Cover and concealment in the forward areas.
- (d) The road net.
- (e) The feasibility of delivering rations on vehicles close to forward troops.
- (f) Enemy observation and fire.
- (g) The type of ration in use.
- (h) Overall efficiency, including conservation and security of vehicles and facility of control.
- (i) The desires of the unit commanders.

c. Battle Group Control of Kitchens.

- (1) Battle group control of kitchens provides maximum flexibility and efficiency in the use of kitchen trucks and facilitates ration distribution. It locates the kitchens centrally, permits close supervision by the supply and maintenance platoon leader, thus relieving the unit commanders of an administrative burden. Kitchens under battle group control, however, are located farther from the

troops, making transmission of the unit feeding plan more difficult and increasing the possibility that the food will not be as hot or as palatable as desired. Further, the kitchen vehicles are not immediately available to the units for other uses.

- (2) When kitchens are located at battle group, the supply and maintenance platoon leader supervises meal preparation and delivery of food. He issues necessary instructions, supervises loading of food and water, and controls vehicle movement. Vehicles are dispatched to the battle group release point, where they are released to unit control. Guides from each unit meet their trucks and guide them to the unit mess locations. When feeding is completed, vehicles return to the battle group release point, where the supply and maintenance platoon leader assumes control.

d. Unit Control of Kitchens.

- (1) In a static or reserve situation, unit messages may be under the direct control of the unit commanders. The unit commander, under these conditions, assumes responsibility for his mess and dispatches his kitchen truck to battle group to draw his daily rations.
- (2) Advantages to company control of the unit mess—

- (a) The kitchen and kitchen personnel are under the immediate control of the unit commander.
 - (b) Unit feeding plans are simpler and easier to change and disseminate than battle group plans.
 - (c) Under favorable conditions, troops can be served hotter and more palatable food.
 - (d) The unit gains the control and use of the kitchen truck.
- (3) Disadvantages of unit control of the unit mess—
- (a) Mess personnel serving forward area units may be exposed to hazards that interfere with the preparation of food.
 - (b) The unit commander is given an added administrative burden.
 - (c) Kitchen trucks are not immediately available to battle group for use in transporting troops and obtaining emergency rations, water, and other supplies from division distributing points or Army supply points.

e. Feeding Plans.

- (1) A feeding plan is prepared at battle group level. When the plan is approved by the battle group commander, the S4 transmits it to the unit commander as early as possible. This allows mess personnel maximum time to prepare meals. The feeding plan includes all or part of the following instructions:

- (a) Time and place of ration issue.
 - (b) Location of kitchens.
 - (c) Vehicles to be employed for delivery.
 - (d) Instructions relative to loading of food containers.
 - (e) Additional items of supply which are to be sent forward.
 - (f) Time vehicles will leave kitchen locations.
 - (g) Designation of release point.
 - (h) Time vehicles are released to unit control and time they revert to battle group control.
 - (i) Any restrictions on movement.
- (2) The unit feeding plan is based upon the battle group plan and prepared by each unit. The plan includes—
- (a) Type of ration to be fed.
 - (b) Selection of unit mess area.
 - (c) Arrangements for vehicles and guides and carrying parties.
 - (d) Release and return of vehicles.
 - (e) Supervision of vehicles while under unit control.
 - (f) Arrangements for feeding attached personnel.
- (3) (a) When rations arrive at the unit kitchen, the mess steward separates them into three meals and prepares the meals to serve to the troops. The unit feeding plan is prepared by and transmitted from unit commanders to their mess stewards (through the

LCP if the unit kitchens are under battle group control). This plan enables the mess steward to place proper amounts of food in hot food containers for serving to the personnel. Food is either served at the kitchen location or is delivered to the forward unit positions.

- (b) When cooked meals cannot be delivered to forward positions by kitchen or lighter vehicles, members of the unit mess detail may move as far forward as possible to the rear of their units with necessary equipment to heat individual rations and prepare hot drinks for frontline troops.
 - (c) Combat elements are usually provided with one-burner cooking units. These units are designed for individual or small group use when it is not otherwise practicable to deliver hot food.
- (4) (a) The situation dictates whether food and water can be delivered to forward positions from the kitchen location during daylight or darkness. Food and water are usually transported to unit mess locations by 2½-ton kitchen trucks or by ¼-ton trucks with trailers. In rough terrain the use of pack animals or hand-carrying parties may be necessary. When available, civilian porters may be

used for hand carry in order to conserve the fighting strength of the units concerned.

- (b) Any combination of methods of food delivery may be used. Food may come part of the way forward on 2½-ton trucks and then be transferred to ¼-ton trucks and trailers for further delivery to unit mess locations. The food may be delivered to unit mess locations, using the 2½-ton trucks for the entire trip, or ¼-ton trucks and trailers of the units may be sent all the way back to battle group to pick up the food.
 - (c) Often the combat situation does not permit one or more of the forward area platoons to come back to the unit mess location; these platoons then are fed by delivering the food in ¼-ton trucks, if practicable, or by carrying parties. Hot food containers are returned, when empty, to the unit mess location. These containers, and those used at the mess location, are returned to the rear, cleaned by the mess personnel, and are ready to be used in serving the next meal.
- (5) The mess location is selected by the unit commander. It should be convenient to the troops and be accessible to vehicles carrying food. The area should be large enough to permit the dispersion of troops

being fed, provide for concealment from hostile observation and protection from flat trajectory fire. When practicable, personnel are fed at the unit mess location.

- (6) (a) There are several ways in which food and water may be delivered to attached elements. The method used depends upon the tactical disposition of the unit, terrain, distance from the parent unit, and size of the attachment.
- (b) Elements of units employed in support of a rifle company are usually fed by their parent units. Difficult terrain or distance from the parent kitchen sometimes makes this inadvisable. Under such circumstances, the ration is drawn and prepared by the parent unit and delivered to the kitchen of the supported company. The food is carried forward on supported unit transportation. Mess personnel from the parent unit go forward with the food.

f. Water.

- (1) Water is generally delivered with food although it is a miscellaneous item of supply. The battle group draws its water in five gallon cans and water trailers which are sent to the water point to effect resupply for the unit. If possible, a water purification bag is set up at the mess location and filled from the five gallon cans

so that several men can fill their canteens at one time. This practice prevents waste that would result if the water purification bag were not used. Some five gallon cans of water may be left in forward areas.

- (2) If water is not available at engineer water points, there are several expedients available to purify water before it is used for cooking and drinking. Such methods include use of calcium hypochlorite, individual water purification tablets, and boiling the water before consumption. For details concerning water purification, refer to FM 21-10.

Section III. MAINTENANCE

168. General

a. Maintenance is any action taken to keep materiel in a serviceable condition or to restore unserviceable equipment to serviceability. Essentially, maintenance is the care taken and the work done to keep an item of equipment, clothing, or supply in serviceable condition.

b. Maintenance of materiel includes testing, servicing, classifying, repairing, rebuilding, evacuating, and reclaiming

169. Principles of Maintenance

a Commanders are responsible for maintenance within their commands and for the supervision and inspection of maintenance activities.

b. Preventive maintenance is the keystone of the Army maintenance system. Preventive maintenance includes a systematic servicing, inspection, correction of initial failure before damage occurs, detection and correction of abuse, and teaching the proper care and use of equipment. Preventive maintenance of vehicles, scheduled at definite intervals, prevents a large number of vehicles from being out of service at any one time.

c. Repairs are made as far forward in the combat zone as the tactical situation permits. This eliminates time-consuming evacuation measures and serves to return the equipment to the using unit much quicker.

d. Authorized supplies of repair parts and tools are maintained within the battle group to insure quick and efficient repair.

e. When possible, repair personnel go to the equipment rather than having equipment evacuated to repair personnel.

170. Systems of Maintenance

For flexibility and efficiency, maintenance throughout the Army is based upon organizing repairs into categories and echelons. These categories are organizational maintenance, field maintenance, and depot maintenance. The echelons of maintenance run from first echelon through fifth echelon.

171. Organizational Maintenance

a. Organizational maintenance is defined as that

work and repair done on unit equipment by unit personnel.

b. Within the battle group, organizational maintenance is performed by drivers, wearers, crews, and users of equipment, and by specially trained mechanics who are assigned to the unit.

c. Organizational maintenance normally includes first and second echelon work.

(1) First echelon maintenance is maintenance performed by the user, wearer, operator, or crew of the equipment. He provides the proper care, use, operation, cleaning, preservation, lubrication, and such adjustment, minor repair, testing, and parts replacement as may be prescribed by pertinent technical publications, and tool and parts lists.

(2) Second echelon maintenance is maintenance performed by specially trained personnel in the using organization. Appropriate publications authorize additional tools, necessary parts, supplies, test equipment, and skilled personnel to perform this echelon of maintenance.

172. Field Maintenance

a. Field maintenance is maintenance authorized and performed by a designated maintenance agency in direct support of a unit. The division ordnance battalion, for example, performs field maintenance on ordnance equipment for units of the division.

b. Field maintenance is limited normally to the replacement of unserviceable parts, subassemblies, or assemblies. It includes third and occasionally fourth echelon work.

(1) Units performing third echelon maintenance, repair assemblies, and handle overflow work from lower echelons within the limits imposed by their tools, parts, and testing equipment. Usually, items repaired in third echelon maintenance shops are returned to the using units. Third echelon units also support lower echelons by providing technical assistance, by performing maintenance in the unit areas, and by supplying repair parts when necessary. An example of third echelon repair is the replacement of a transfer case on a 2½-ton truck.

(2) Fourth echelon maintenance is performed by units organized as a semifixed or permanent shop to provide maintenance within a geographical area. Fourth echelon maintenance requires and involves a large assortment of parts and assemblies and more precise tools and test equipment than are available in lower echelons of maintenance. An example of fourth echelon maintenance is the installation of a new motor in a vehicle.

173. Depot Maintenance

a. Depot maintenance is maintenance involved in major overhauling or complete rebuilding of mate-

riel. It is intended to augment stocks of serviceable equipment. It employs more equipment, and requires personnel of higher technical skill than are available in organizational and field maintenance activities. It is not performed in the combat zone.

b. Depot maintenance includes only fifth echelon maintenance. Fifth echelon maintenance includes rebuilding major items, assemblies, parts, accessories, tools, and test equipment. It is normally performed on a "rebuild and return to stock" basis. An example of fifth echelon maintenance is the complete rebuilding or overhauling of a vehicle or artillery piece.

174. Inspections

a. Inspections are the means whereby commanders of all units within the battle group ascertain the serviceability of equipment and the efficiency of maintenance.

b. All inspections must be carefully planned and executed. Definite objectives for the inspection are ascertained. Inspectors are briefed as to what they are to inspect and what they are to look for. Reports of inspections are carefully studied to determine trends, efficiency of present maintenance, corrective measures required, and to compare present maintenance with that reflected in previous inspection reports.

175. Vehicle Maintenance

a. Driver (or crew) maintenance is performed by drivers of trucks and the crews of crew-served vehicles. Drivers use available tools to perform first

echelon maintenance on their vehicles. Their maintenance includes correct loading and driving; servicing with fuels, lubricants, coolants, and air; inspecting; cleaning; tightening; and the care of tools and accessories. The driver does not lubricate any part of the vehicle where overlubrication would result in damage. He does not make any adjustment on the vehicle which should be made by a mechanic.

b. Each company commander is responsible for the direction and supervision of driver maintenance duties. Driver preventive maintenance services include—

- (1) Before-operation services.
- (2) During-operation services.
- (3) At-halt services.
- (4) After-operation services.
- (5) Weekly services shown on the Vehicle and Equipment Operational Record (DD Form 110). Defects requiring maintenance beyond the scope of the driver are noted on this record and reported so that corrective action may be taken.

c. Battle group maintenance is performed by the mechanics of the supply and maintenance platoon of headquarters and headquarters company. These mechanics perform the semiannual or 6,000-mile preventive maintenance service on all wheeled vehicles. Although the mechanics normally operate at the battle group supply and service area, they may often go to forward areas to assist in the maintenance, repair, or evacuation of wheeled vehicles.

Section IV. REPAIR, SALVAGE, AND MISCELLANEOUS ACTIVITIES

176. Repair

a. Timely repair of equipment within the battle group is essential. Minor repairs on company weapons are accomplished by the individual users or the unit armorer. Items requiring more extensive repairs are taken to the combat unit's supply area and from there to the battle group collecting point located in the supply and service area. Battle group, where practicable, repairs the equipment and returns it to the companies. If battle group cannot repair an item, the supply warrant officer of the supply and maintenance platoon expeditiously evacuates the damaged item to a division collecting point established by the technical services and procures and issues a replacement item.

b. A report concerning damaged equipment that cannot be evacuated by units of the battle group is sent to the logistical control point. Repairs on such equipment are made on the spot by service personnel, or the equipment is evacuated by special vehicles and crews to appropriate maintenance agencies.

c. The repair of signal equipment begins with the using unit. Should a higher echelon of repair be necessary, the communication platoon has field radio mechanics assigned for this purpose. The mechanics operate from the communications platoon headquarters. If the mechanics cannot make necessary repairs, repair may be effected by the

forward repair section of the area support platoon, or the equipment is evacuated to the division signal battalion where the repair is continued. The signal battalion establishes forward repair sections to service equipment as requested by battle group (par. 24).

177. Salvage

a. Unit commanders are responsible for salvage discipline, which includes collecting and moving salvage to collecting points. Normally, combat units evacuate salvage to the battle group supply and service area, utilizing ammunition vehicles making supply trips to the rear.

b. A battle group salvage collecting point is established by the supply and maintenance platoon of the headquarters and headquarters company and operates under the supervision of the supply warrant officer. This collecting point may operate a collecting point for salvage, excess, and captured enemy materiel. When practicable, materiel brought to this point is segregated into appropriate technical service lots. It is evacuated on partially loaded or empty vehicles going to division. The supply officer coordinates the evacuation of such materiel with the dispatcher of vehicles going to the rear from the supply and service area.

c. Technical services at division establish collecting points for salvage, excess, damaged items, and captured enemy materiel. When practicable, it is evacuated on partially loaded or empty vehicles going to division installations in the rear.

178. Excess

Items in excess to the needs of the battle group are collected and evacuated through supply channels in the same manner as salvage. Every effort is made to collect excess and return it to division for later issue through supply channels. Excess includes not only equipment, but also items of individual and organizational clothing.

179. Captured Enemy Materiel

a. Captured enemy materiel is collected and evacuated in the same manner as salvage. The battle group commander controls the distribution and use of captured supplies. The waste and wanton destruction of captured materiel is prohibited. Subject to limitations of maintenance facilities and class III supplies, enemy vehicles may be used to supplement organic transportation. Captured enemy materiel is always reported to the next higher headquarters where it may be used as a source of intelligence information.

b. Enemy weapons are used only in emergencies. When they are used, friendly troops are notified. This prevents the characteristic sound of such weapons from attracting our own fire. Weapons or equipment that appear to be of new or unusual design are evacuated through intelligence channels.

180. Evacuation of the Dead

Since there are no personnel provided for identification and evacuation of the dead at the battle group level, the battle group depends entirely upon

division and higher headquarters for support. The support comes primarily from the recovery and disposition platoon of the division quartermaster company. Should the division or battle group suffer heavy casualties, additional support could be expected from nondivisional graves registration units. Under normal conditions, the division quartermaster company furnishes a three-man collecting and evacuation section to the battle group with the responsibility for evacuating remains from forward areas to the division collecting point.

181. Destruction of Vehicles and Equipment

When necessary, equipment is destroyed to deny its use to the enemy. The decision to destroy equipment is made only on authority delegated by the division or corps commander. Plans for destruction are prepared in the event of imminent capture.

CHAPTER 2

MEDICAL SERVICE

Section I. THE BATTLE GROUP SURGEON

182. The Battle Group Surgeon

a. The battle group surgeon is a member of the battle group commander's special staff. His duties are to—

- (1) Keep the battle group commander informed as to the medical situation and capabilities of the medical service.
- (2) Recommend measures for the prevention of loss of manpower due to disease, injury, and wounds.
- (3) Make a medical estimate of the situation and submit the medical plan to the battle group commander.
- (4) Maintain the medical records of the command.
- (5) Supervise the movement of the sick and wounded within the battle group area to include aeromedical evacuation as well as all technical matters pertaining to the medical service within the battle group.
- (6) Supervise training in medical subjects within the battle group.

b. The battle group surgeon is also the medical platoon leader and has the following additional duties—

- (1) Supervises the discipline, organization, employment, and training of the medical platoon.
- (2) Makes necessary reconnaissance for the relocation of the battle group aid station(s).
- (3) Assists in the treatment of the sick and wounded.

Section II. MEDICAL PLATOON

183. Organization

a. The medical platoon is organic to the battle group headquarters and headquarters company. The platoon is organized into a platoon headquarters, a treatment section, and an evacuation section.

b. The platoon headquarters of the battle group medical platoon is made up of—

- (1) A noncommissioned officer who functions as the platoon sergeant and may also work in the battle group aid station.
- (2) A medical supply specialist who procures and distributes all types of supplies to the platoon.
- (3) A general clerk who maintains all records for the platoon except those pertaining to supply.

c. The treatment section of the battle group medical platoon is made up of—

- (1) A general duty medical corps officer who is the section leader. He assists the battle group surgeon in accomplishing the following functions:
 - (a) Establish and operate one or more aid stations.
 - (b) Personally supervise the treatment of the sick and wounded.
 - (c) Keep the surgeon informed of the medical situation at all times.
 - (d) Supervise the treatment and evacuation of the sick and wounded forward of the aid station.
 - (e) Perform reconnaissance functions for relocation of aid stations as directed.
- (2) A treatment section sergeant who supervises the activities of the treatment section as directed.
- (3) A group of company aid men. In combat, in the field, and in some training situations, these aid men are attached to the companies of the battle group on the basis of one per platoon for the rifle companies and one aid man each to the mortar battery and the headquarters and headquarters company.
- (4) A group of medical aid men and aid station attendant who perform treatment in the battle group aid station as directed by the section leader.

d. The evacuation section of the battle group medical platoon is made up of—

- (1) A section sergeant who supervises the activities of the section as directed by the medical platoon leader.
- (2) Four litter squads with a squad leader in charge.
- (3) Four ambulance drivers to operate the four organic forward area ambulances.

Section III. EMPLOYMENT AND EVACUATION

184. Company Aid Men

In combat and in certain field and training situations, the sick and wounded of the battle group are first given emergency medical treatment by the attached company aid men. They treat emergency cases on the battlefield and place casualties in marked, protected places to wait for the arrival of litter bearers or frontline ambulances. The company aid men direct walking wounded to the aid station. They inform the medical platoon leader of the situation by means of messages carried by litter bearers, ambulance drivers, or walking wounded. When the time and tactical situation permit, they initiate DA Form 8-26 (Emergency Medical Tags) for those who have been treated.

185. Evacuation

After the company aid man has completed his treatment of a casualty, the casualty is evacuated to the battle group aid station by members of the

evacuation section. When the tactical situation permits, frontline ambulances are used as far forward as possible to speed evacuation and conserve the strength of litter bearers. Employment duties of evacuation personnel include—

- a.* Maintaining contact with combat elements.
- b.* Moving the wounded who are unable to walk to the battle group aid station.
- c.* Directing or guiding walking wounded to the aid station.
- d.* Administering additional emergency medical treatment as needed.
- e.* Assisting in movement of the battle group aid station.
- f.* Acting as messengers.
- g.* Initiating emergency medical tags when necessary, time and the tactical situation permitting.
- h.* Monitoring personnel, when indicated by the situation, for the presence of CBR contamination prior to medical treatment.

186. Battle Group Aid Station

a. The first medical installation in the normal chain of evacuation is the battle group aid station operated by the treatment section of the medical platoon. The battle group aid station is established as far forward in the battle group area as the tactical situation permits. It may be located farther forward in the attack than the defense. The aid station must be capable of splitting to meet tactical situations requiring dispersal of elements

of the battle group. Considerations governing the location of the aid station include the following:

- (1) Tactical operation of the battle group.
- (2) Expected areas of casualty density.
- (3) Protection afforded by defilade.
- (4) Convergence of lines of drift.
- (5) Length of litter and ambulance haul.
- (6) Cover and concealment.
- (7) Security.
- (8) Accessible evacuation routes to front and rear.
- (9) Avoidance of likely enemy targets, such as bridges, fords, important road junctions, firing positions, and supply installations.
- (10) Location of open areas suitable for landing helicopter ambulances.
- (11) Communications.

b. At the aid station, casualties requiring further evacuation to the rear are given additional emergency medical treatment and prepared for evacuation. Constant efforts are made to prevent unnecessary evacuation. Minor wounds and illnesses are treated and returned to duty as soon as possible. Specific functions of the battle group aid station include—

- (1) Receiving and recording casualties.
- (2) Examining and sorting casualties and returning physically fit to duty.

- (3) Giving emergency medical treatment necessary and preparing casualties for further evacuation when necessary.
- (4) Preventing and treating shock.
- (5) Providing temporary shelter and protection for casualties.
- (6) Providing temporary treatment for combat exhaustion cases.
- (7) Notifying the battle group S1 of all casualties and nonbattle losses processed through the aid station, giving accurate identification and disposition as directed by unit SOP.
- (8) Initiating emergency medical tags for those casualties not previously tagged.
- (9) Verifying information contained on all emergency medical tags of casualties evacuated to the battle group aid station.

c. When treatment is completed, if further evacuation and treatment are necessary, this function is the responsibility of the supporting division medical service.

CHAPTER 3

PERSONNEL SECTION

187. Organization

The personnel section consists of a warrant officer (personnel officer), the personnel sergeant, two personnel administrative specialists, a personnel management specialist, and five personnel administrative clerks.

188. Duties of Personnel Section

This section maintains the company and battle group records, reports, rosters, returns, files, and correspondence prescribed by AR 345-5. In combat, this section is separated from the battle group headquarters and may be located at the rear echelon of division headquarters or in the battle group field train bivouac. For duties of the personnel officer, see FM 7-40.

APPENDIX

REFERENCE

AR 711-16	Installation Stock Control and Supply Procedures.
SR 320-5-1	Dictionary of United States Army Terms.
AR 320-50	Authorized Abbreviations
FM 3-5	Tactics and Technique of CBR Warfare.
FM 5-6	Operations of Engineer Units
FM 5-10	Routes of Communication
FM 5-15	Field Fortifications
FM 5-20-Series	Principles of Camouflage
FM 5-22	Camouflage Materials
FM 5-25	Explosives and Demolitions
FM 5-31	Use and Installation of Booby-traps.
FM 5-34	Engineer Field Data
FM 20-32	Employment of Land Mines
FM 21-5	Military Training
FM 21-6	Techniques of Military Instruction.
FM 21-10	Military Sanitation
FM 21-30	Military Symbols
FM 7-10	Rifle Company, Infantry Regiment.
FM 7-40	Infantry Regiment
FM 17-35	Reconnaissance Battalion Armored Division.

TM 3-366	Flamethrower and Fire Bomb Fuels.
TM 3-376	M2A1 Portable Flamethrower
TM 5-260	Principles of Bridging
TM 5-725	Rigging
DA TB ENG 117	Field Fortifications
DA Pam No. 105-1	Index of Army Motion Pic- tures, Film Strips, Slides and Phono Recordings.
DA Pam No. 310- Series	Military Publications Indexes (as applicable).

INDEX

	Paragraphs	Page
Aid Station, Battle Group:		
Evacuation.....	186	260
Operation.....	186	260
Airborne Operations:		
Communication during.....	54	76
Counterfire squad.....	106	178
Serials.....	54	76
Approach March.....	46	62
Assault Gun Platoon:		
Communications.....	123	188
Mission.....	120	184
Organization.....	121	184
Personnel, duties.....	122	186
Assault Gun Platoon in Attack:		
Ammunition resupply.....	131	197
Attached.....	125	192
Displacement.....	132	199
Firing positions, occupation.....	126	194
Firing positions, selecting.....	126	194
General support.....	125	192
Motorized.....	134	200
On foot.....	134	200
Positions.....	130	197
Security.....	128	196
Support fires.....	129	197
Attack:		
Command and Control.....	67	114
Counterfire squad.....	98	173
Formation.....	67	114
Fortified position, counterfire squad.....	108	179
Night, counterfire.....	110	180
Of final objective.....	71	127

	Paragraphs	Page
Attack—Continued		
Plan, Reconnaissance Platoon.....	67	114
River line, counterfire squad.....	109	179
Attack, night:		
Communication during.....	48	70
Antitank Protection	57	79
Axis of Communication	45	60
Baseline	88	146
Basic Load	163	225
Battle Group Headquarters Section:		
Personnel in.....	6	7
Clerk, Message	18	17
Combat Supply Operations	161	222
Command Posts:		
Arrangement.....	41	55
Definition.....	38	52
Displacement.....	45	60
Marking.....	40	55
Location requirements.....	39	52
Opening.....	40	55
Organization and conduct.....	42	57
Security.....	39	52
Communication:		
Assault Gun Platoon.....	123	188
Axis.....	44	60
Definition.....	25	32
Engineer Platoon.....	148	211
Means.....	25	32
Message Center.....	18	17
Platoon.....	16	14
Radio.....	27	35
Reconnaissance platoon.....	59	83
Responsibility.....	14, 22	11, 28
Rules.....	14	11
Security.....	36	48
Sound.....	31	43
Support for Battle Group.....	15	13

	Paragraphs	Page
Communication—Continued		
Training-----	37	51
Wire-----	26	32
Communication Platoon:		
Mission-----	16	14
Organization-----	16	14
Personnel-----	17	15
Communication, Means:		
Wire-----	26	32
Communication, visual-----	30	42
Communication Officer, Battle Group:		
Duties of-----	21	26
Company Headquarters:		
Personnel-----	4	5
Consolidation:		
Assault Gun Platoon-----	135	201
Counterfire:		
Computer's duties-----	78	131
Definition-----	80	133
Missions-----	84	138
Information-----	81, 83	134, 137
Operations-----	82	135
Personnel armament-----	79	132
Plotter's duties-----	78	131
Sound locating equipment-----	87	143
Specialist, duties-----	78	131
Surveying baseline-----	91	155
Weapons-----	84	138
Counterfire Squad:		
Armament, equipment, maintenance, supply.	79	132
Control-----	95	164
Counterfire, countermortar, counter- battery.	80	133
Counterfire information-----	81, 83	134, 137
Counterfire operations-----	82	135
Counterfire weapons-----	84	138
Fire adjustment-----	94	162

	Paragraphs	Page
Counterfire Squad—Continued		
Organization.....	77	131
Orienting position.....	90	152
Tactical employment.....	96-118	172-182
Training.....	86	142
Under attachment.....	82	135
Cryptography.....	27	35
Equipment, care.....	36	48
Defense:		
Antiairborne, counterfire squad.....	107	179
Assault Gun Platoon.....	138-142	202-204
Communication during.....	48	70
Conduct.....	68	119
Counterfire squad.....	101	175
Engineer platoon.....	151	215
General.....	75	129
Mission.....	60	85
Mobile.....	70, 141	126, 203
Position.....	70, 141	126, 203
Reconnaissance Platoon.....	68	119
Selection positions,.....	68	119
Delaying Action.....	143	205
Communication during.....	51	74
Conduct.....	69	123
Counterfire squad.....	103	176
Positions.....	69	123
Withdrawal.....	69	123
Drop Zone, Marking.....	165	223
Engineer Platoon:		
Employment.....	149	211
Mission.....	145	206
Organization.....	146	206
Personnel, duties.....	147	208
Engineer Squad:		
Personnel.....	147	208
Evacuation of Dead.....	180	254

Fire Support:

Reconnaissance Platoon-----	67	114
-----------------------------	----	-----

Frontages:

Reconnaissance Platoon-----	63	86
-----------------------------	----	----

GOPL-----	75	129
-----------	----	-----

Headquarters Commandant:

Communication responsibilities-----	22	28
-------------------------------------	----	----

Infrared devices-----	30	42
-----------------------	----	----

Intermediate Speed Radio Operator-----	20	22
--	----	----

International Morse Code-----	30	42
-------------------------------	----	----

Kitchens:

Battle group control-----	167	238
---------------------------	-----	-----

Feeding Plans-----	167	238
--------------------	-----	-----

Location-----	167	238
---------------	-----	-----

Unit control-----	167	238
-------------------	-----	-----

Logistical Control Point:

Functions-----	166	235
----------------	-----	-----

Logistics-----	153-188	216-263
----------------	---------	---------

Maintenance:

Depot-----	173	249
------------	-----	-----

Field-----	172	248
------------	-----	-----

First echelon-----	171	247
--------------------	-----	-----

Inspections-----	174	250
------------------	-----	-----

Organizational-----	171	247
---------------------	-----	-----

Principles-----	169	246
-----------------	-----	-----

Second echelon-----	171	247
---------------------	-----	-----

Sound equipment-----	24	31
----------------------	----	----

Third echelon-----	172	248
--------------------	-----	-----

Vehicle-----	175	250
--------------	-----	-----

Maneuvering Force, Reconnaissance Platoon.	67	114
--	----	-----

Material:

Captured enemy-----	179	254
---------------------	-----	-----

Destruction-----	181	255
------------------	-----	-----

Excess-----	178	254
-------------	-----	-----

Repair-----	176	252
-------------	-----	-----

	Paragraphs	Page
Medical Platoon:		
Aid Station.....	186	260
Company and men.....	184	259
Evacuation section.....	185	259
Organization.....	183	257
Mess Management.....	167	238
Message Center:		
Command post.....	41	55
Messenger.....	18, 29	17, 40
Messenger Communication:		
Efficiency.....	29	40
Scheduled.....	29	40
Missions:		
Assault gun platoon.....	120	184
Counterfire.....	84	138
Engineer platoon.....	145	206
Headquarters and Headquarters Com- pany.....	2	3
Reconnaissance.....	63	86
Supply and Maintenance Platoon.....	153	216
Movement to Contact:		
Approach march.....	46	62
Assembly area.....	46	62
Assault gun platoon.....	124	191
Command posts.....	46	62
Control.....	46	62
Counterfire squad.....	97	172
With friendly forces out front.....	70	126
Without friendly forces out front.....	70	126
Offense:		
Communication during.....	47	67
Engineer platoon.....	150	213
Reconnaissance platoon.....	67	114
Signal officer's duties.....	47	67
Operation Order:		
Paragraph 5.....	34	45
Orders:		
Chief radio operator's.....	35	46

	Paragraphs	Page
Orders—Continued		
Communication chief's.....	35	46
Operation.....	34	45
Oral communication.....	35	46
Section chief's.....	35	46
Organization.....	3	3
Personnel, Battle Group Headquarters		
Section:		
Assistant S2, S3, S3 Air.....	6	7
Clerical.....	11	9
Counterfire Operations Sergeant.....	9	8
Information Specialist.....	10	9
Intelligence Sergeant.....	7	8
Light Truck Driver.....	12	10
Operations Sergeant.....	8	8
Radiotelephone Operator.....	13	10
Personnel, Company Headquarters.....	5	5
Personnel, Duties:		
Battle Group Headquarters Section.....	6, 13	7, 10
Company Headquarters.....	5	5
Personnel, General.....	153-188	216-263
Personnel, Message Center, Duties.....	18	17
Personnel, Radio and Visual Section, Duties.	20	22
Personnel, Reconnaissance Platoon.....	58	82
Personnel, Wire Section, Duties.....	19	20
Personnel Section:		
Duties of personnel.....	188	263
Organization.....	187	263
Purpose and Scope.....	1	3
Pursuit.....	73, 136	128, 201
Pyrotechnics.....	30	42
Quartering Party.....	45	60
Radio Communication:		
Assault Gun Platoon.....	123	188
Characteristics.....	27	35

	Paragraphs	Page
Radio Communication—Continued		
Power supply.....	27	35
Tactical use.....	27	35
Radio Nets:		
Administrative.....	27	35
Assault Gun Platoon.....	123	188
Command.....	27	35
Radio, use.....	27	35
Radio Operator, Chief.....	20	22
Radio telephone operator.....	20	22
Radioteletype operator.....	20	22
Radioteletype team chief.....	20	22
Radio/Wire Integration System.....	28	39
Reconnaissance.....	63	86
Reconnaissance Platoon:		
Capabilities.....	60	85
Characteristics.....	57	79
Communication.....	59	83
Mission.....	56	79
Organization.....	57	79
Personnel.....	58	82
Reconnaissance and Security Platoon:		
Basic concepts.....	61	85
Characteristics of Employment.....	62	86
Definitions.....	63, 64	86, 101
Fundamentals.....	63, 64	86, 101
Tactics.....	65-69	113-123
Relief:		
Communication during.....	53	75
Counterfire squad, conduct.....	105	177
Retirement.....	52, 104	75, 177
Reorganization:		
Assault Gun Platoon.....	133	200
Counterfire squad.....	99	174
Reports:		
Counterfire.....	85	139
Shell.....	85	139
Reserve Battle Group.....	141	203

	Paragraphs	Page
Resupply:		
Aerial.....	165	233
Subordinate units.....	164	232
Retrograde:		
Assault Gun Platoon.....	143	205
Engineer Platoon.....	152	215
Operations.....	76	130
Riverline Operations:		
Counterfire squad.....	109	179
S-1:		
Command Post responsibilities.....	41	55
Communication responsibilities.....	22	28
S-2:		
Communication responsibilities.....	22	28
S-3:		
Communication responsibilities.....	22	28
S-4:		
Communication responsibilities.....	22	28
Signal Panels.....	30	42
Signal Supply Point.....	23	30
SOI.....	20,	22,
	30, 32	42, 44
Preparation.....	32	44
SOP:		
Definition.....	33	45
Sound:		
Installing equipment.....	89	148
Locating equipment.....	89	148
Locating a target.....	93	160
Selecting sound locating positions.....	88	146
Sound Communication.....	31	43
Special Operations, counterfire squad:		
Amphibious.....	118	182
Built up areas.....	111	180
Defiles.....	115	181
Deserts.....	117	182
Fortified locality.....	108	179
Jungle.....	116	181

	Paragraphs	Page
Special Operations, counterfire squad—		
Continued		
Mountains.....	113	181
Night.....	110	180
River Line.....	109	179
Snow.....	114	181
Woods.....	112	180
SSI.....	20, 32	22, 44
Preparation.....	32	44
Supply Procedures, General.....	162	224
Supply:		
Signal.....	23	30
Supply and Maintenance Platoon:		
Ammo squad.....	155	217
Capabilities.....	154	216
Duties of Personnel.....	156	218
Logistical Control Point.....	160	221
Mission.....	153	216
Organization.....	155	217
Supply and service area.....	157, 158	219, 220
Truck squad.....	155	217
Supply and Service Area, Battle Group:		
Activities in.....	159	221
Characteristics.....	158	220
Description.....	157	219
Supply, Systems:		
Classes I-V.....	163	225
Surgeon, Battle Group:		
Duties.....	182	256
Surveying:		
A baseline.....	91	155
A counterfire weapon.....	92	160
Switchboard Operator.....	19	20
Tactics:		
Action within enemy position.....	72	128
Reconnaissance platoon.....	70-76	126-130
Tactical Employment:		
Airborne Operations.....	54	76

	Paragraphs	Page
Tactical Employment—Continued		
Defense.....	49	71
Delaying Action.....	51	74
Movement to Contact.....	46	62
Night Attack.....	48	70
Offense.....	47	67
Relief.....	53	75
Retirement.....	52	75
Withdrawal.....	50	71
Task Force:		
Operations.....	74, 137	129, 201
Teletypewriter Operator.....	18	17
Training:		
Communications.....	37	51
Counterfire.....	86	142
Specialist.....	37	51
Troop Leading, Assault Gun Platoon.....	125	192
Wire Communication:		
Assault Gun Platoon.....	123	188
Advantages.....	26	32
Definition.....	26	32
Installation.....	26	32
Limitation.....	26	32
Wire Foreman.....	19	20
Wiremen.....	19	20
Wire Team Chief.....	19	20
Withdrawal:		
Assault Gun Platoon.....	143	205
Communications during.....	50	71
Counterfire squad.....	102	176
Engineer Platoon.....	152	215
Night.....	50	71

By Order of *Wilber M. Brucker*, Secretary of the Army:

MAXWELL D. TAYLOR,
General, United States Army,
Chief of Staff.

Official:

HERBERT M. JONES,
Major General, United States Army,
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US ARADCOM	PMST Jr Div Unit
OS Maj Comd	PMST Mil Sch Div Unit
MDW	HumRRO
Armies	Tng Cen
Corps	Mil Dist
Div	ROTC Stu Sr Div, MS IV
Brig	

NG: State AG; units—same as Active Army.

USAR: Same as Active Army.

For explanation of abbreviations used, see AR 320-50.